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Fruit Situation

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Economics, Statistics,
and Cooperatives Service

U.S. Department of
Agriculture

Approved by the
World Food and
Agricultural Outlook
and Situation Board

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THE FRUIT SITUATION

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SUMMARY

Fruit Prices to Show Moderate Seasonal Increases

Larger supplies of citrus fruit and fresh apples will moderate the expected seasonal advance in grower and retail fruit prices this spring.

Reversing a 3-month decline, the index of prices received by growers for fresh and processing fruits advanced to 202 (1967=100) in February 1980, up 5 percent from January 1980. The February figure was still 13 percent below a year earlier. Farm prices for fresh and processed fruit during the first half of 1980 are expected to increase seasonally but are likely to remain moderately below a year ago.

Retail prices for fresh fruit have declined since September reflecting the seasonal increase in supplies of fresh apples and citrus fruit. The January 1980 Consumer Price Index for fresh fruit—at 233.6 (1967=100)—was 18.6 percent below the record high of 286.9 reached in August 1979. The January figure was still 7.4 percent above a year ago because of continually increasing marketing costs. So, in spite of larger available supplies of citrus fruit and apples, retail prices of fresh fruit will likely show a moderate seasonally advance this spring.

February 1 prospects for the U.S. orange crop indicated a record 261 million boxes (10.3 million metric tons), 24 percent above 1978/79. Larger crops were expected in all producing areas except Texas. Utilization of oranges for both fresh market and processing outlet has been substantially above a year ago. Although imports of frozen concentrated orange juice (FCOJ) are expected to be smaller, current indications point to moderately larger supplies of FCOJ this season as a result of a larger carryover and pack. The larger crop has pushed f.o.b. prices for fresh oranges sharply below last year's levels. With a 22 percent larger U.S. Valencia crop in prospect to be marketed this spring and summer, orange prices are expected to remain below year-earlier levels during the remainder of the season. Some icing of fruit was reported in the central part of Florida during the first week of March, so the juice content of some fruit may be reduced from the pre-freeze level.

U.S. grapefruit production should total 67.6 million boxes (2.50 million metric tons), 1 percent larger than the 1978/79 crop. The late season has caused the movement of fresh grapefruit into

domestic and foreign markets to lag last season's pace. However, deliveries to processing plants are running moderately ahead of last year. Although f.o.b. prices for fresh grapefruit from Florida and Texas are generally averaging above year-earlier levels, they have declined substantially from their early-season high. Good processor demand and smaller remaining supplies should keep grapefruit prices relatively firm.

February 1 prospects pointed to a lemon crop of 19.6 million boxes (676,000 metric tons), 1 percent above the 1978/79 season. Total utilization of lemons through mid-February was well below the same period a year ago. Total shipments of fresh lemons to domestic and foreign market were down substantially from a year ago because of smaller available supplies and much higher prices early in the season. Movement of lemons for processing use was only about half of last year's volume. However, since late January, prices have since declined to levels below a year ago. The sharply larger remaining supplies should keep lemon prices below last year's high levels throughout the remainder of the season. However, the recent heavy rains in Southern California could reduce the lemon supply.

Storage stocks of fresh apples were moderately larger than a year earlier. In response to good demand for both fresh market and processing use, apple prices have averaged moderately above year-earlier levels, and will remain relatively firm.

Supplies of canned noncitrus fruit are above last season, reflecting the larger pack. Overall shipments so far were running generally behind a year earlier due primarily to higher prices. To stimulate movement, packers have offered promotional allowances for several canned fruits. Prices may weaken more if sales continue slack. Current stocks of dried fruit—particularly raisins—are sharply above a year ago. Wholesale prices of raisins are down 31 percent from a year earlier. Cold storage holdings of frozen fruit and berries are also moderately larger than last year due primarily to larger strawberry supplies. However, supplies of early spring fresh strawberries are likely to be reduced because of the damage from the recent storm in Southern California and the freeze in Florida.

The estimated 1979 utilized production of the six major domestic tree nuts, at 657,500 tons, was up 45 percent from the 1978 crop. Larger production of almonds, Macadamia nuts, pistachios, and walnuts more than offset smaller crops of filberts and pecans. In response to good demand, higher prices are estimated for all tree nuts except pecan and walnuts. The total value of utilized tree nut production is estimated at $902 million, up 42 percent from 1978.

RECENT DEVELOPMENTS AND OUTLOOK

GENERAL PRICE OUTLOOK

Reversing a 3-month decline, the index of prices received by growers for fresh and processing fruits advanced to 202 (1967=100) in February 1980 from 192 in January 1980. The February figure was still 13 percent below a year earlier.

With larger available supplies of citrus and apples, prices are not expected to show an appreciable seasonal increase. Thus, the index of prices received by growers for fresh and processed fruit during the first half of 1980 is likely to average moderately below year-earlier levels.

Retail prices for fresh fruit as measured by the Bureau of Labor Statistic's (BLS) price index, have declined since September, but still averaged 12 percent higher in 1979 than in 1978. The January 1980 index at 233.6 (1967=100), was 18.6 percent below the August record of 286.9, but was still 7.4 percent above a year ago. Most of the August-to-January decline was due to the record large citrus crop. The continued increase in marketing costs, particularly for energy, has kept fresh fruit prices except oranges above a year ago. And, the higher marketing costs are expected to keep retail prices of fresh fruit during the first half of 1980 moderately higher than a year ago.

Table 1—Index of quarterly prices received by growers for fresh and processed fruit

Year	(1967=100)			
	1st	2nd	3rd	4th
1976	126	126	130	135
1977	142	150	160	200
1978	189	224	265	226
1979	225	246	257	217
1980	[1]197			

[1] Two-month average.

Source: Agricultural Prices, CRB, ESCS.

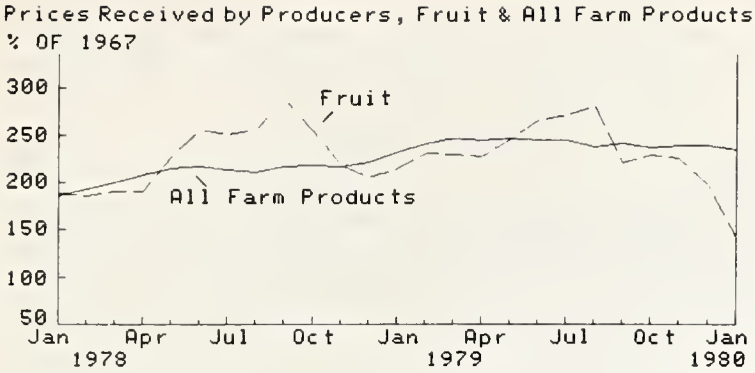


Table 2—Quarterly consumer price indexes for fresh fruit

Year	(1967=100)			
	1st	2nd	3rd	4th
1976	146	161	170	166
1977	172	190	193	185
1978[1]	196	223		
1978[2]	194	222	247	221
1979	218	251	279	246
1980	[3]234			

[1] From 1976-June 1978, these indexes were entitled Urban Wage Earners and Clerical Workers, BLS discontinued these indexes as of June 1978. [2] Starting with Jan. 1978 new index entitled All Urban Consumers, replaces previous index. [3] January 1980 figure.

Source: Bureau of Labor Statistics.

Wholesale prices of most canned fruit have been relatively stable, but above year-earlier levels. Demand for some canned fruits has weakened—particularly peaches, pears, and fruit cocktail. To stimulate movement, packers have offered promotional allowances for several canned fruits. However, the BLS January 1980 wholesale price index of canned fruit at 226.8 (1967=100), was still 8.4 percent above a year ago. If movement continues slack, canned fruit prices may weaken some more.

Wholesale prices for frozen fruit have remained relatively stable since last fall, but the January 1980 index was still 15.6 percent above a year earlier. With cold storage holdings moderately larger than a year ago, particularly for strawberries, wholesale prices of frozen fruit are likely to remain steady or decline slightly during the remainder of the season. Likewise, stocks of frozen concentrated orange juice are also larger than last year. Retail sales are running at last year's pace, but bulk sales are up. If retail sales remain at the current level, prices may ease somewhat. Wholesale prices of dried fruit, particularly raisins, have declined to levels sharply below a year earlier, in response to the sharp increase in supplies. The BLS January 1980 wholesale price index for raisins stood at 443.5 (1967=100), down 31 percent from last year when rains severely damaged the raisin crop.

CITRUS

The February 1 forecast of the 1979/80 citrus crop indicated a record 15.6 million tons (14.2 million metric tons), 18 percent more than last season. Increases are currently expected for all citrus crops. The 1979/80 season points to a record orange crop of 11.3 million tons, 24 percent greater than last season. As a result, prices received by orange growers have averaged substantially to sharply below year-earlier levels. Estimates for the grapefruit crop at 2.8 million tons, and the lemon crop at 745,000 tons, are only slightly larger than last season. So grower prices for grapefruit and lemons have averaged above a year ago. Some icing of fruit was reported in the central part of Florida during the first week of March, so the juice content of some fruit may be reduced from the prefreeze level.

Oranges

Record Crop in Prospect

The 1979/80 U.S. orange crop is forecast at a new high of 261 million boxes (10.3 million metric tons), 1 percent above the January 1 forecast and 24 percent more than the 1978/79 crop. Larger output was estimated for all producing areas except Texas. This year's smaller crop in Texas was due to the extensive freeze damage in January 1979. Production of early mid-season and navel varieties accounted for 56 percent of the crop, up sharply from a year ago. The later Valencia crop was estimated 22 percent larger than last season.

A record orange crop of 200 million boxes is still expected in Florida, 22 percent above last year. The early and mid-season harvest—at 115 million boxes—is 26 percent more than last season. The Valencia crop is forecast at 85 million boxes, 16 percent above the 1978/79 season.

In California, prospects are for a crop of 54 million boxes, 6 percent above the January 1 forecast and 45 percent above last season's harvest. The Arizona crop is expected to total 3.50 million boxes, 21 percent above the 1978/79 season. The Texas crop is indicated at 3.90 boxes, down 39 percent.

As of February 1, the U.S. orange crop harvest was 30 percent complete, compared with 32 percent a year ago. Harvest of the early, mid-season, and

Table 3—Citrus fruit: Production, 1977/78, 1978/79, and indicated 1979/80[1]

Crop and State	Boxes			Ton equivalent		
	Utilized		1979/80	Utilized		1979/80
	1977/78	1978/79		1977/78	1978/79	
	1,000 boxes[2]			*1,000 tons*		
Oranges:						
Early, Midseason and Navel varieties[3]:						
California	20,000	20,800	29,000	750	780	1,088
Florida	88,300	91,000	115,000	3,974	4,095	5,175
Texas	3,800	4,300	2,300	164	183	98
Arizona	820	700	900	31	26	34
Total	112,970	116,800	147,200	4,919	5,084	6,395
Valencias:						
California	22,600	16,400	25,000	848	615	938
Florida	79,500	73,000	85,000	3,578	3,285	3,825
Texas	2,250	2,100	1,600	96	89	68
Arizona	2,800	2,200	2,600	105	83	98
Total	107,150	93,700	114,200	4,627	4,072	4,846
All Oranges:						
California	42,600	37,200	54,000	1,598	1,395	2,026
Florida	167,800	164,000	200,000	7,552	7,380	9,000
Texas	6,100	6,400	3,900	260	272	166
Arizona	3,620	2,900	3,500	136	109	132
Total oranges	220,120	210,500	261,400	9,546	9,156	11,324
Grapefruit:						
Florida all	51,400	50,000	51,000	2,185	2,125	2,168
Seedless	43,000	42,700	43,000	1,828	1,815	1,828
Pink	14,300	13,300	14,000	608	565	595
White	28,700	29,400	29,000	1,220	1,250	1,233
Other	8,400	7,300	8,000	357	310	340
Texas	11,900	9,000	6,600	476	360	264
Arizona	3,000	2,250	2,900	96	72	93
California	8,360	5,770	7,100	273	189	232
Desert Valleys	4,200	3,270	3,600	134	105	115
Other areas	4,160	2,500	3,500	139	84	117
Total grapefruit	74,660	67,020	67,600	3,030	2,746	2,757
Lemons:						
California	20,300	13,900	16,500	771	528	627
Arizona	5,800	5,500	3,100	220	209	118
Total lemons	26,100	19,400	19,600	991	737	745
Limes:						
Florida	460	720	1,100	18	29	44
Tangelos:						
Florida	4,900	4,200	5,900	221	189	266
Tangerines:						
Florida	3,200	3,500	4,000	152	166	190
Arizona	600	450	650	23	17	24
California	1,400	1,450	1,700	53	54	64
Total tangerines	5,200	5,400	6,350	228	237	278
Temples:						
Florida	4,900	4,700	5,400	221	212	243
Total	336,340	311,940	367,350	14,255	13,306	15,657

[1] The crop year begins with bloom of the first year shown and ends with completion of harvest the following year. [2] Net content of box varies. Approximate averages are as follows: Oranges-California and Arizona, 75 lbs,; Florida, 90 lbs,; Texas, 85 lbs,; Grapefruit-California, Desert Valleys, and Arizona, 64 lbs,; other California areas, 67 lbs,; Florida, 85 lbs,; Texas, 80 lbs,; Lemons, 76 lbs,; Limes 80 lbs,; Tangelos, 90 lbs,; Tangerines-California and Arizona, 75 lbs,; Florida, 95 lbs,; and Temples 90 lbs. [3] Navel and miscellaneous varieties in California and Arizona. Early and midseason varieties in Florida and Texas, including small quantities of Tangerines in Texas.

Sources: Crop Production CRB, ESCS and Florldia Crop and Livestock Reporting Service.

navel crop is 54 percent complete, compared with 58 percent on February 1 last year. Valencia harvest has not begun in volume except in Texas.

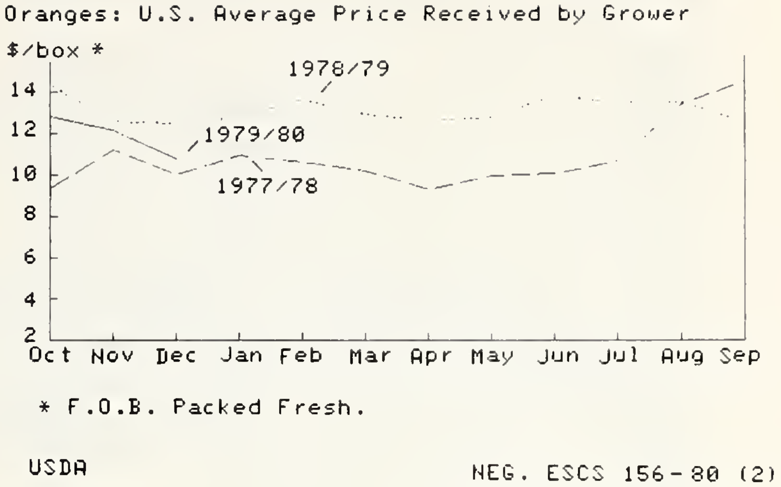
Market Prospects and Prices

Through mid-February, shipments of fresh oranges from Florida were running only slightly above year-earlier levels, mainly due to the increased domestic shipments. Demand for Florida oranges for fresh market is also weak because of the sharply larger supplies of oranges from California. Consequently, f.o.b. prices for Florida oranges have averaged substantially lower than a year ago. In mid-February, f.o.b. prices for early and mid-season oranges were quoted at $4.18 per 4/5 bushel carton, compared with $5.00 a year earlier.

Florida's delivered-in prices for early and mid-season processing oranges have also averaged well below year-earlier levels. The larger available supply of Florida oranges for processing use has weakened prices. In view of the much larger Valencia crop in prospect, Florida orange prices are expected to remain lower.

Shipments of navel oranges for fresh use for both domestic and foreign markets from California and Arizona through mid-February were sharply above a year ago. In contrast, deliveries to processors have substantially lagged a year ago when a larger quantity of oranges was salvaged for processing use from the freeze-damaged crop. Exports for this season are expected to continue to improve because of adequate supplies and lower prices. In addition, exports to Japan will continue to increase since Japan has raised the import quota for oranges. Furthermore, Mexico's smaller 1979/80 citrus crop will also strengthen demand for U.S. oranges.

In response to the sharply larger crop, f.o.b. prices for fresh California-Arizona navels have declined steadily from their early-season highs. By mid-February, prices were sharply below a year ago and the season average f.o.b. prices by mid-February was $5.15 per carton, compared with $7.00 last season. In view of a sharply larger Valencia crop, f.o.b. prices for the remainder of the season are expected to remain below last year's high level.



So far this season, f.o.b. prices for Texas oranges for fresh market have averaged moderately higher than a year earlier, while delivered-in prices for processing have averaged only slightly higher.

Retail prices for fresh oranges have been declining steadily since last September. The BLS January 1980 Consumer Price Index for all urban consumers for fresh oranges stood at 236.2, (1967=100), down 5.7 percent from a year earlier. Retail prices are expected to remain low in view of the sharply larger remaining supplies.

Larger Supplies of Frozen Concentrated Orange Juice Expected

The record Florida orange crop and the substantial increase in production of California oranges will result in larger utilization of Florida oranges for processing. In addition, the orange juice yield

Table 4—Florida oranges used for frozen concentrate

Crop year	Florida orange and Temple production	Used for frozen concentrates		Yield per box
	Million boxes	*Million boxes*[1]	*Percent*	*Gallons*[2]
1974/75	178.6	135.5	75.9	1.31
1975/76	186.7	144.5	77.4	1.29
1976/77	190.6	148.7	78.0	1.07
1977/78	172.7	132.2	76.5	1.23
1978/79	168.7	130.2	77.2	1.34
1979/80	205.4	N.A.	N.A.	[3] 1.33

[1] Includes tangelos, Temples, tangerines, and K-early citrus. [2] 45-degree-brix. [3] Estimated. N.A.= not available.

Source: Crop Production, CRB, ESCS.

has continued to improve from earlier forecasts. The February 1 Florida all orange juice yield for the 1979/80 crop was projected at 1.33 gallons of 45 degree brix concentrate per box, compared with the October 1 estimate of 1.30 gallons per box and 1.34 gallons per box from the 1978/79 crop. The increased utilization of oranges for processing, combined with the relatively high juice yield will make the frozen concentrated orange juice (FCOJ) pack considerably larger than the 173 million gallons packed during the 1978/79 season. Total imports of FCOJ for this season are likely to be smaller than a year ago. However, the larger carryin at the beginning of the season, combined with the larger pack, will push the total FCOJ supply moderately above last season.

The production of FCOJ got off to a fast start this season. Florida packers had processed 81.1 million gallons (excluding reprocessed) through February 9, compared with 66.4 million gallons during the corresponding period a year ago. However, the pack from other sources including imports so far this season is only one-fourth of last year's volume. Total product movement this season is moderately ahead of last season's pace. However, because of the sharply larger carryover, total stocks of FCOJ available as of February 9 were 5 percent above a year earlier.

Canner list prices of FCOJ have been steady at $3.55-$3.60 per dozen 6-ounce cans (unadvertised brands, Florida canneries), the same as a year ago. So far, movement has been good due mainly to the increase in bulk sales. Retail sales have held at last season's pace. Packers may ease prices somewhat to stimulate the retail sales.

Continued Good Movement of Chilled Orange Juice

In response to continued growth in demand, Florida citrus packers continue to process more chilled orange juice. Through February 9, Florida's net pack of chilled orange juice, at 84.2 million gallons, was 23 percent larger than a year ago. With a record orange crop, the total 1979/80 pack of chilled orange juice is going to be another record-breaker.

Despite higher prices, total product movement so far this season through February 9 was more than a tenth above a year ago. However, export shipments were down slightly. With the carryin at the beginning of the season almost the same as a year ago, the larger pack more than offset larger movement, leaving the stocks-on-hand sharply above last season.

Canned Orange Juice Supply Sharply Larger

Florida's pack of canned orange juice, at 7.9 million cases (24/2's) through February 9, was 23 percent larger than the same period a year earlier. Movement has been generally good. F.o.b. prices have fluctuated between $7.25 to $8.00 per case (12/46 ounces) so far this season. The current price of $8.00 is the same as a year ago. Because of sharply larger carryover stocks at the beginning of the season and larger pack, the stocks-on-hand as of February 9 were 43 percent above year-earlier levels.

Grapefruit

Slightly Larger Crop

The 1979/80 U.S. grapefruit crop is forecast at 67.6 million boxes (2.50 million metric tons), 1 percent larger than the 1978/79 crop. The forecast as of February 1 for larger crops is indicated for all producing areas except Texas.

Florida growers expect to harvest 51 million boxes, 2 percent above last season. California prospects are 23 percent above last season while Arizona growers expect to harvest 2.9 million boxes, 29 percent more than last season. The Texas crop at 6.6 million boxes is 27 percent below last season because of last winter's freeze.

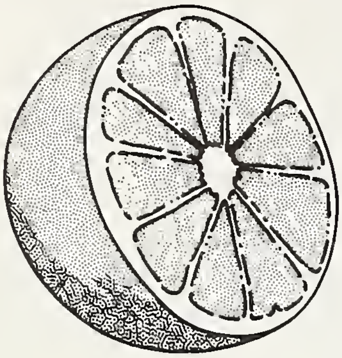
The U.S. grapefruit harvest was 38 percent complete on February 1, compared with 39 percent on the same date last year. Picking in Florida was 40 percent complete on February 1, the same as last year. In Texas, harvest passed the two-thirds mark, compared with 57 percent on February 1, 1979.

Market Outlook

Because of late season, the movement of fresh grapefruit from Florida into domestic market channels has lagged behind last season's pace. F.o.b. prices for fresh grapefruit from Florida are generally averaging above year-earlier levels, but have declined from their early-season high. In mid-February, f.o.b. prices for pink grapefruit in Indian River shipping point, were quoted at $4.88 per box (4/5 bushel), compared with $3.98 a year earlier.

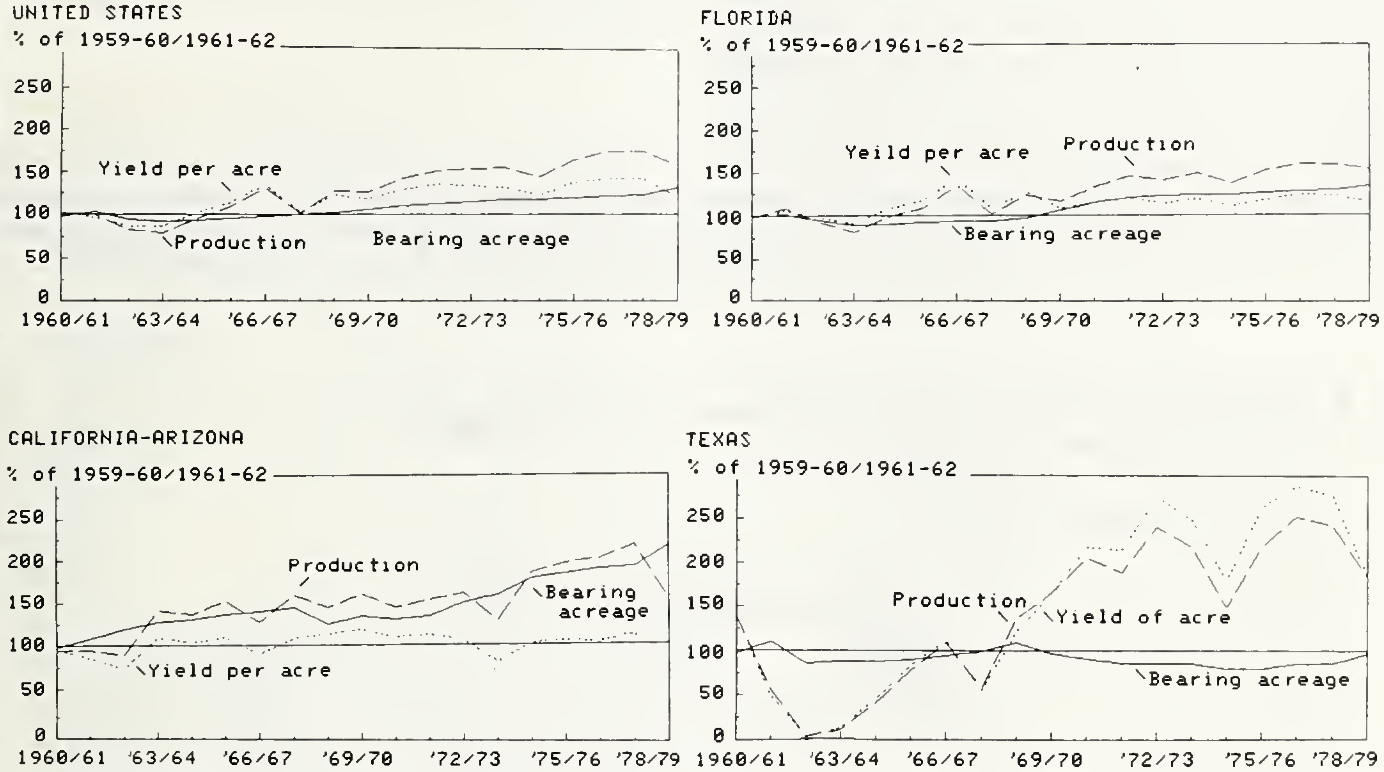
Export shipments of grapefruit have been weaker than last year with a decrease of almost 5 percent, due primarily to sharply reduced purchases from Japan, our primary market. The appreciation of the U.S. dollar against the Japanese yen and higher U.S. prices contributed to the decrease to some extent. The smaller shipments were also due to the late season. However, export shipments may improve somewhat as the season progresses.

Deliveries of Florida grapefruit to processing plants were moderately larger than last season. As a result of sharply smaller carryover of processed grapefruit products, Florida canners have been activily bidding for grapefruit since the beginning



GRAPEFRUIT:

ACREAGE, YIELD, AND PRODUCTION



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of the season. Consequently, the delivered-in prices for grapefruit for processing juice has averaged much higher than a year ago. F.o.b. prices for grapefruit for frozen concentrated grapefruit juice so far this season has averaged $3.99 per box, compared with $2.53 last year. Since remaining supplies are near year-earlier levels, prices for Florida grapefruit are expected to continue relatively firm.

Because of the smaller crop, utilization of Texas grapefruit for both fresh and processing so far are below year-earlier levels. The smaller crop has pushed average grapefruit prices sharply higher than last season. Remaining supplies at the end of January were only half of last season's quantity. Thus, season-average price for Texas grapefruit is expected to be sharply higher.

Sharply Larger Grapefruit Juice Pack

The net pack of Florida frozen concentrated grapefruit juice through February 9 has been running well above last season's pace. However, because of the smaller carryover, the total supply is still below year-earlier levels. Despite sharply higher prices, movement so far has been running slightly above last year's pace. Consequently, stocks-on-hand as of February 9 were 12 percent less than a year earlier. The current f.o.b. prices at $3.35 per dozen 6-ounce can (Florida canneries), is almost 30 percent higher than a year ago. In view of generally good demand, prices are likely to remain firm.

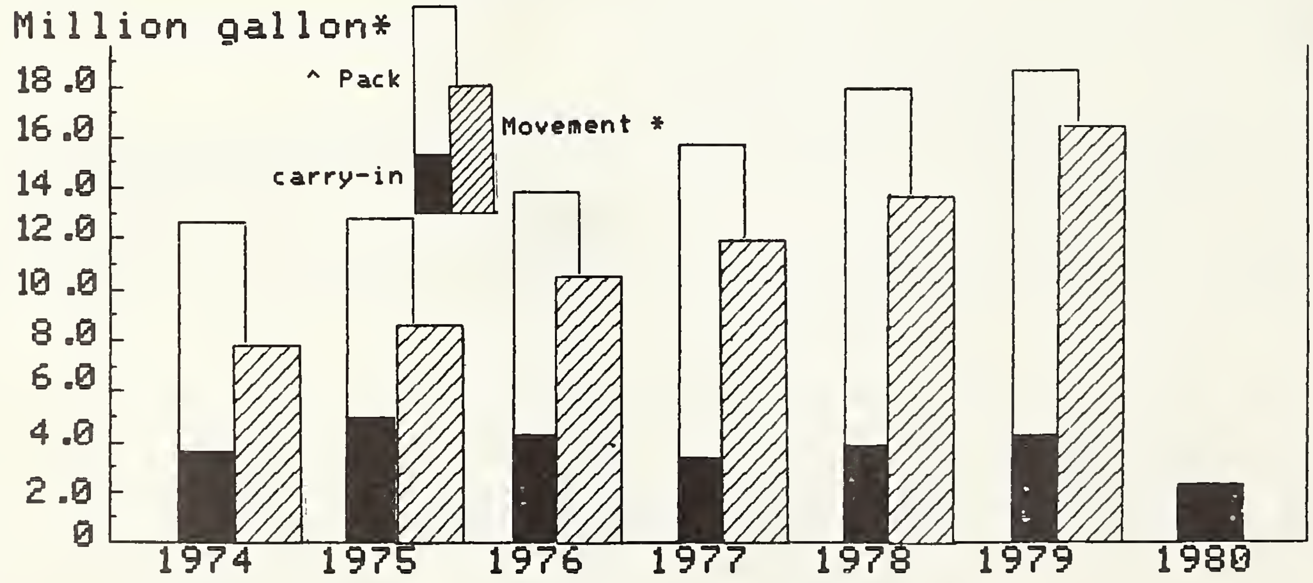
The total pack of Florida chilled grapefruit juice (excluding single-strength reprocessed) through February 9 was also sharply larger than last season. Movement has been near last season's pace. As a result, stocks-on-hand as of February 9 were almost two and half times the level of a year ago.

In contrast, the total pack of Florida canned grapefruit juice totaled 16.4 million cases (No. 24/2's) through February 9, a decrease of 15 percent from last year. In response to higher prices, movement has substantially lagged last season's pace. The slow movement could be due to consumers' preference to chilled and frozen concentrated grapefruit juice. To stimulate sales, the Florida packers have recently reduced f.o.b. price from $7.50 per dozen 46-ounce cans (Florida canneries) to $6.75, but it is still $0.75 higher than a year ago. If movement does not improve, prices may weaken further.

Lemons

February 1 prospects pointed to a lemon crop of 19.6 million boxes (676,000 metric tons) 1 percent above the 1978/79 season. The crop in California, at 16.5 million boxes, is 19 percent above last sea-

Florida Supply and Movement of Frozen Concentrate Grapefruit

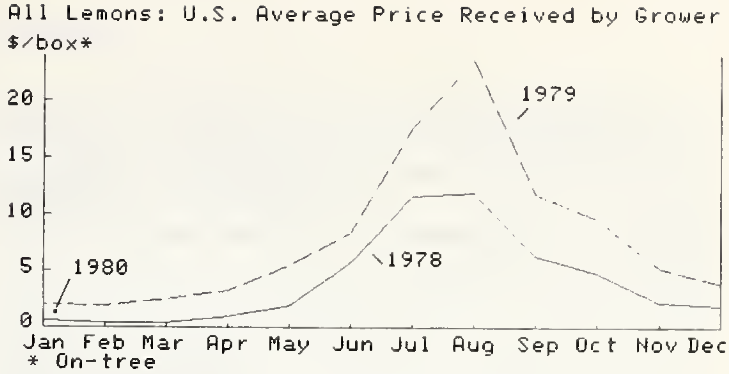


* 45° Brix. ^ Includes imports. Flordia Canners Association Data.

Year Beginning December

son. In Arizona, the crop is forecast at 3.1 million boxes, a decline of 44 percent from 1978/79.

Total utilization of lemons through mid-February was sharply below the corresponding period a year ago. Total shipments of fresh lemons to both foreign and domestic markets were down almost 25 percent from a year earlier. Sharply higher prices early in the season slowed movement of fresh lemons. The export market does not appear encouraging, particularly Europe since 1979/80 lemon crops in Italy and Spain are currently estimated larger than 1978/79. However, domestic movement may improve somewhat since f.o.b. prices for fresh lemons have declined to levels moderately below a year earlier. In mid-February, f.o.b. prices were quoted at $6.18 per carton, compared with $6.58 a year ago, but still averaged sharply higher so far this season. In view of substantially larger remaining supplies, lemon prices are expected to remain below last year's high levels throughout the remainder of the season.



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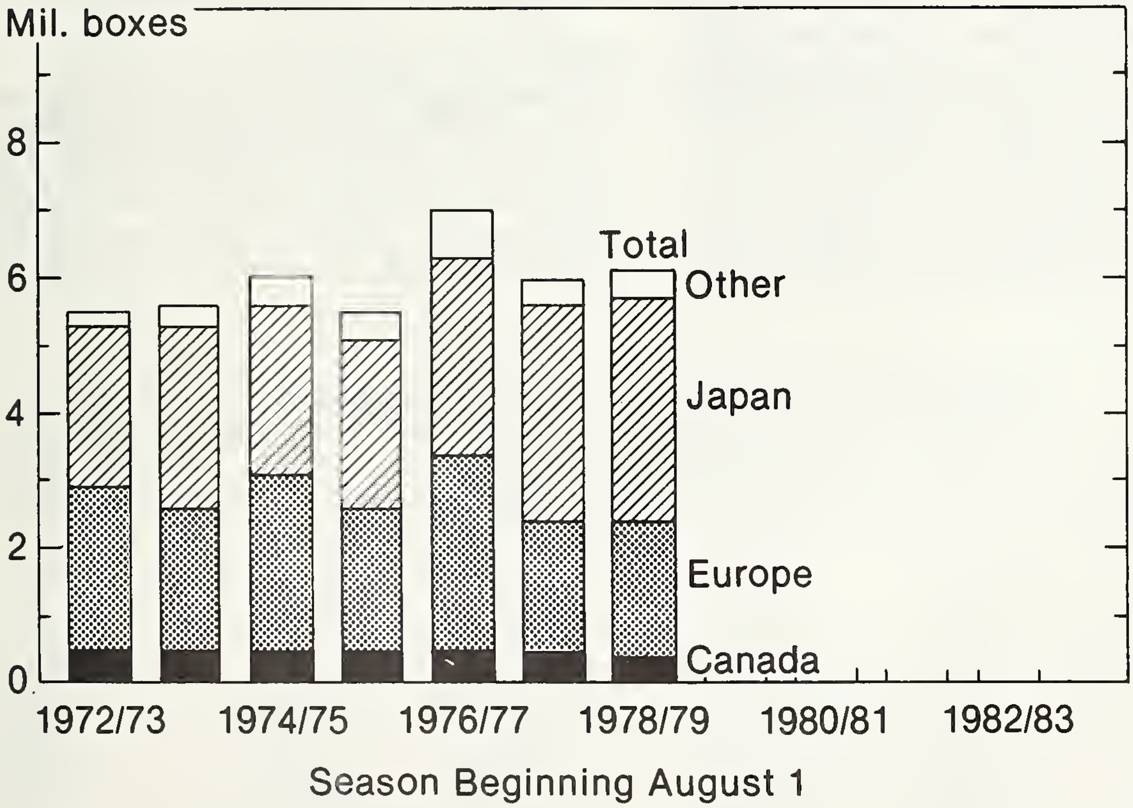
Movement of lemons to processing outlets through mid-February was down 40 percent from last season. On-tree returns to growers for processing lemons are substantially above year-earlier levels.

U.S. Exports of Fresh Lemons



OTHER CITRUS

Florida's Temple crop is forecast at 5.4 million boxes (220,000 metric tons), 15 percent above 1978/79. As of February 1, the crop was 30 percent harvested, compared with 27 percent on the same date last year. Because of the record orange crop in Florida, a larger quantity of Temples will be sold for fresh use. Through February 17, fresh sales were 30 percent larger than the comparable period a year ago and accounted for 68 percent of total sales. Processing use was 11 percent below last season's level. F.o.b. prices have been lower than last season and are likely to continue so.

As of February 1, the U.S. tangerine crop was expected to total 6.35 million boxes (252,000 metric tons), 2 percent less than the January 1 estimate but 18 percent more than last season. Larger output is indicated for all producing areas. Florida growers expect to utilize 4 million boxes, 14 percent above last season. The California crop, at 1.7 million boxes, is 17 percent above last season. Arizona growers expected to harvest 650,000 boxes, up 44 percent from last season. As usual, more tangerines have been sold to fresh market. Fresh shipments from Florida through mid-February were considerably above last season's pace, but shipping point prices are averaging only slightly lower.

February 1 prospects pointed to a Florida tangelo crop of 5.9 million boxes (241,000 metric tons), 18 percent above the January 1 forecast and 40 percent above last season. The crop is 93 percent harvested. Because of the larger crop, utilization of tangelos for both fresh and processing is larger than a year ago. Processing use accounted for 71 percent of the total crop, compared with 58 percent last season. F.o.b. prices for tangelos averaged $4.38 per carton (4/5 bushel), compared with $4.90 last season.

FRESH NONCITRUS

Utilized production of noncitrus fruit and berries during 1979 totaled 13 million tons, 7 percent above 1978. Increases in apples, grapes, peaches, pears, and smaller increases in other crops more than offset declines in olives, tart cherries, papayas, pomegranates, strawberries, and dates. Total bearing acreage of noncitrus fruit (including strawberries) during 1979 was down slightly from 1978. In spite of larger production, grower prices were relatively firm. Consequently, the total value of 1979 production for noncitrus fruits and berries (excluding avocados) at $3.3 billion, increased almost 5 percent from 1978 led by apples, grapes, and strawberries.

Apples

Record Crop

Marking the fourth consecutive increase in production, the 1979 commercial apple crop reached a record 7.77 billion pounds (3.52 million metric tons), 2 percent above last year. Of the total production, 7.75 billion pounds were utilized, 3 percent more than from last season's crop. Utilized

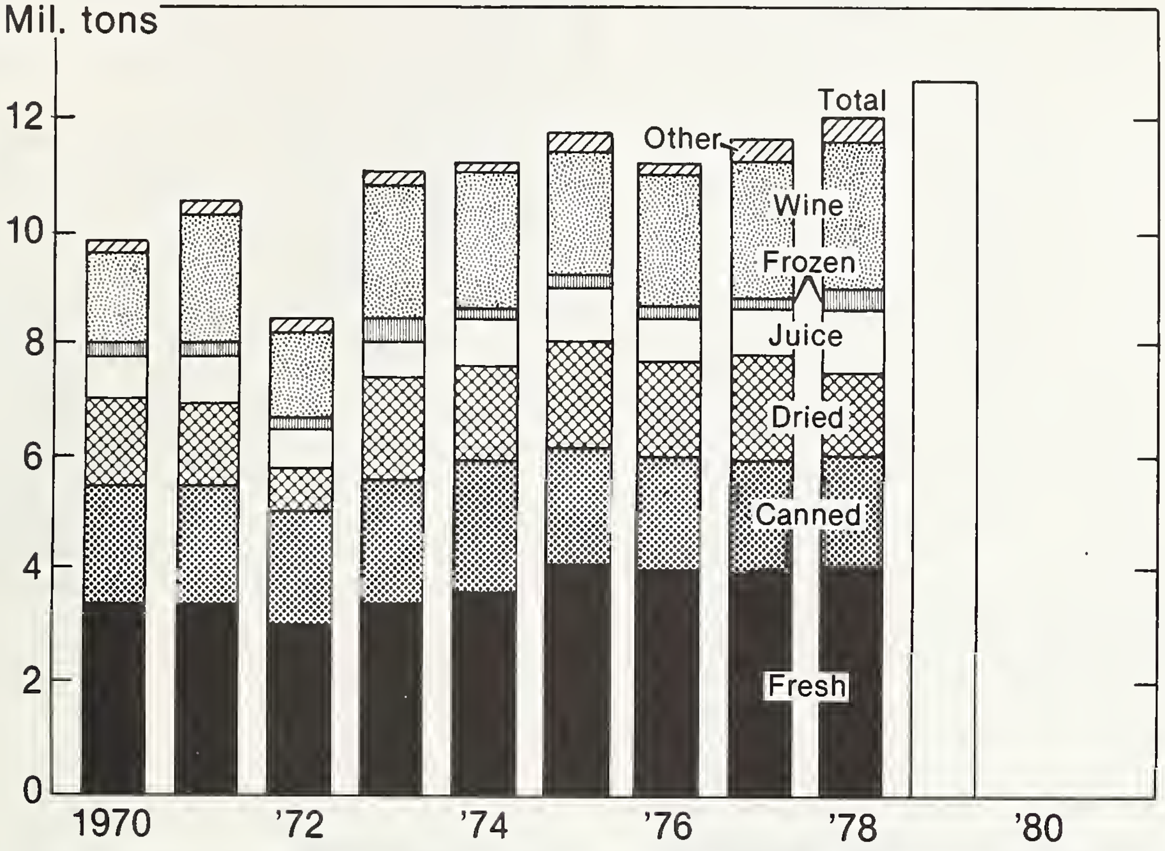
Table 5—Fruits and planted nuts bearing acreage, United States

Year	Citrus fruit[1]	Major deciduous fruits[2]	Minor fruits[3]	Tree nuts[4]	Total fruits and tree nuts
	1,000 acres				
1970	1,122.4	1,576.5	81.4	340.8	3,121.1
1971	1,185.7	1,543.0	82.8	363.0	3,174.5
1972	1,157.8	1,531.7	84.7	381.4	3,155.6
1973	1,180.6	1,535.3	88.1	396.7	3,200.7
1974	1,188.8	1,560.4	90.1	417.8	3,257.1
1975	1,181.3	1,700.5	94.8	435.8	3,412.4
1976	1,178.6	1,645.5	100.7	448.8	3,373.6
1977	1,159.3	1,688.4	109.0	476.6	3,433.3
1978	1,140.1	1,654.7	117.5	504.8	3,417.1
1979[5]	1,134.3	1,641.8	122.9	535.5	3,434.5

[1] Grapefruit, lemons, limes, oranges, tangelos, tangerines and Temples. Acreage is for the year of harvest. [2] Commericial apples, apricots, cherries, grapes, peaches, pears, plums and prunes. [3] Avocados, dates, figs, nectarines, olives, persimmons and pomegranates. [4] Almonds, filberts, and walnuts. Pistachios beginning 1977. [5] Preliminary.

Source: Noncitrus Fruits and Nuts Annual, CRB, ESCS.

Noncitrus Fruits: Production and Utilization*



*Includes culls and cannery diversions for California clingstone peaches.

USDA

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Table 6—Apple production by leading varieties and State, 1978 and 1979

Leading varieties	U.S. production		Percentage of U.S. total apple production		Leading producing States	State production as percentage of U.S. production by variety	
	1978	1979	1978	1979		1978	1979
	Million pounds		*Percent*			*Percent*	
Delicious	2,652.5	2,827.5	35	37	Washington	52	56
Golden Delicious	1,238.4	1,378.5	16	18	Washington	48	52
McIntosh	765.0	654.9	10	8	New York	41	43
Rome Beauty	568.5	563.7	8	7	New York	21	19
Jonathan	401.8	417.5	5	5	Michigan	56	42
York Imperial	349.5	358.6	5	5	West Virginia	35	37
Other varieties	1,631.2	1,566.0	21	20			
U.S. total	7,607.4	7,766.7	100	100			

Source: Noncitrus Fruits and Nuts Annual, CRB, ESCS.

Table 7—Apple cold storage holdings at end of month

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Million pounds											
1977												
Regular	564	308	115	66	36	14	4	15	811	1,861	1,380	840
C.A.	1,212	1,027	798	538	293	153	53	([1])	296	1,281	1,331	1,298
Total	1,776	1,335	913	604	329	167	57	15	1,107	3,142	2,711	2,138
1978												
Regular	458	219	96	49	12	4	2	11	938	1,891	1,610	1,048
C.A.	1,200	953	656	382	174	69	13	([1])	508	1,554	1,610	1,576
Total	1,658	1,172	752	431	186	73	15	11	1,446	3,445	3,220	2,624
1979												
Regular	585	312	165	76	24	11	4	8	1,266	2,233	1,701	1,167
C.A.	1,477	1,223	884	601	327	157	35	4	569	1,626	1,675	1,623
Total	2,062	1,535	1,049	677	351	168	39	12	1,835	3,859	3,376	2,790
1980												
Regular	679											
C.A.	1,510											
Total	2,189											

[1] Less than 1 million lb.

C.A.—Controlled atmosphere.

Source: Cold Storage, CRB, (ESCS).

production in the East, at 3.19 billion pounds, was virtually unchanged from last year, while utilized production in the Central States fell 13 percent to 1.18 billion pounds. The West utilized 3.38 billion pounds, 12 percent above 1978. Washington, the Nation's leading producer, had a record crop of 2.45 billion pounds, 14 percent above last year and 6 percent greater than the previous record of 1976.

California Gravensteins accounted for the largest percentage increase from 1978, up 42 percent, while Golden Delicious and Northern Spy followed with 11 and 10 percent increase, respectively. Red Delicious continued its domination of varieties with 36 percent of the total. Washington State accounted for 56 percent of the Red Delicious crop, up from 52 percent in 1978.

Remaining Supplies Up Moderately

Reflecting the record crop, supplies of apples in cold storage at the end of January amounted to 2.2 billion pounds, up 6 percent from a year ago. About 69 percent of these stocks were in controlled atmosphere (CA) storage, 2 percent more than a year earlier. However, apple stocks in regular storage were up 16 percent. As expected, stocks in the Northwest contributed most to the increase because of the substantially larger crop in Washington.

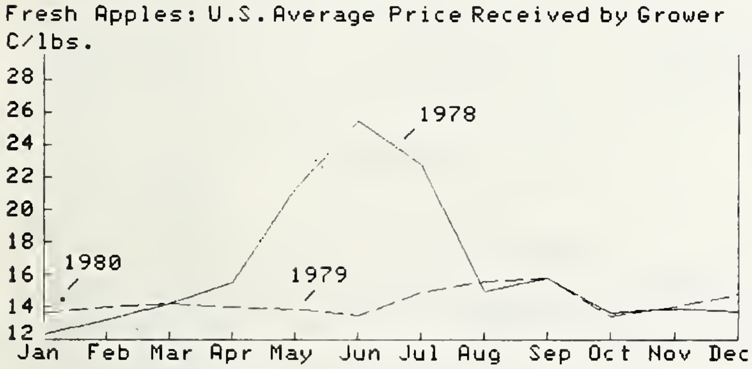
Strong Export Market

During July-December 1979, total exports of fresh apples totaled to 149,817 metric tons, up 81 percent from a year earlier. The sharp increase was shared by all major U.S. markets. The aggressive promotion of the U.S. apple crop in secondary markets such as the Far East, Mideast, and Latin America continued to show results. During July-December 1979, total exports to Latin America increased 30 percent from a year ago, while the purchases from the Far East and Mideast were almost three times as much as a year earlier. In addition, since the importation of apples into Taiwan was liberalized on August 1, 1979, U.S. exports to that country have been very encouraging. Canada, our largest customer, had a smaller crop in 1979 so they have purchased sharply larger quantity of apples than a year ago. Sharp increases in shipments to the United Kingdom, Finland, and Norway have pushed the total exports to Europe 25 percent larger.

During 1979, U.S. imports of fresh apples totaled about 74,888 metric tons, up from 60,005 metric tons in 1978. A sharp boost in apple imports from New Zealand and Chile was chiefly responsible for the increase, since total imports from Canada, our largest supplier, were down moderately from a year ago.

Market Outlook

Fresh apple movement through mid-February was running about 10 percent ahead of last year's pace. With good demand for both fresh market and processing use, apple prices have averaged moderately higher than a year earlier. However, larger cold storage holdings of Golden Delicious apples have resulted in substantially lower f.o.b. shipping point prices in the West. In mid-February, f.o.b. prices for Golden Delicious apples, extra fancy, size 80-125 at Yakima Valley, Washington were quoted at $7.63 a tray compared with $9.55 a year earlier. In February, the average price received by growers for all apples for fresh use was 14.7 cents per pound, compared with 13.9 cents in February 1979. Even with remaining supplies of apples moderately larger this season, particularly in the Northwest where most of the remaining supplies of apples for fresh market are located, prices are expected to remain moderately higher. Continued strong exports will also hold apple prices relatively firm despite the downward pressure from the record orange crop.



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The U.S. season-average price to growers for the 1979 apple crop for all uses has been estimated at 10.7 cents per pound, up 3 percent from 1978. The total value of the 1979 U.S. commercial apple crop was estimated at $826 million, compared with $783 million in 1978.

Avocados

Sharply Larger Crop

Production of avocados in 1978/79 totaled 146,000 tons (133,000 metric tons), 24 percent above the 1977/78 production. The increases were attributed to larger crops in California and Florida. The California crop, at 123,000 tons, was up 15 percent and accounted for 84 percent of the U.S. production. Florida's production of 23,100 tons was up 116 percent from the 1977/78 season. The sharp increase in bearing acreage has contributed to the steady increases in avocado production in both States. Between 1967/68 and 1978/79, avocado bearing acreage in California has increased from 18,730 to 37,790 acres, while that in Florida has increased from 5,200 to 7,700 acres.

In response to the larger crop, the U.S. average avocado price received by growers declined to $645 per ton in 1978/79 from $735 a year earlier. Prices in California averaged $691 per ton, down moderately from a year ago, because of a sharply larger crop Florida's price averaged $400, compared with $690 in 1977/78. California accounted for 90 percent of the value of the U.S. production.

The forecast of California avocados for shipments during the 1979/80 season is 72,500 tons, down 41 percent from last season's 123,125 tons shipped. Early season varieties are in short supply and shipments are expected to be substantially below normal.

The forecast of Florida avocados for certified shipments for the 1979/80 season is 26,250 tons, 17 percent more than last season. Shipments are running ahead of last season's pace. However, more fruit remains to be harvested than usual, and the season is expected to run a little longer than normal. The smaller crop in California has pushed f.o.b. prices for Florida sharply above year-earlier levels. In early February, shipping point prices for Florida avocados, Greenskin varieties, size 8-16, were quoted at $6.75 a flat, compared with $4.75 a year ago.

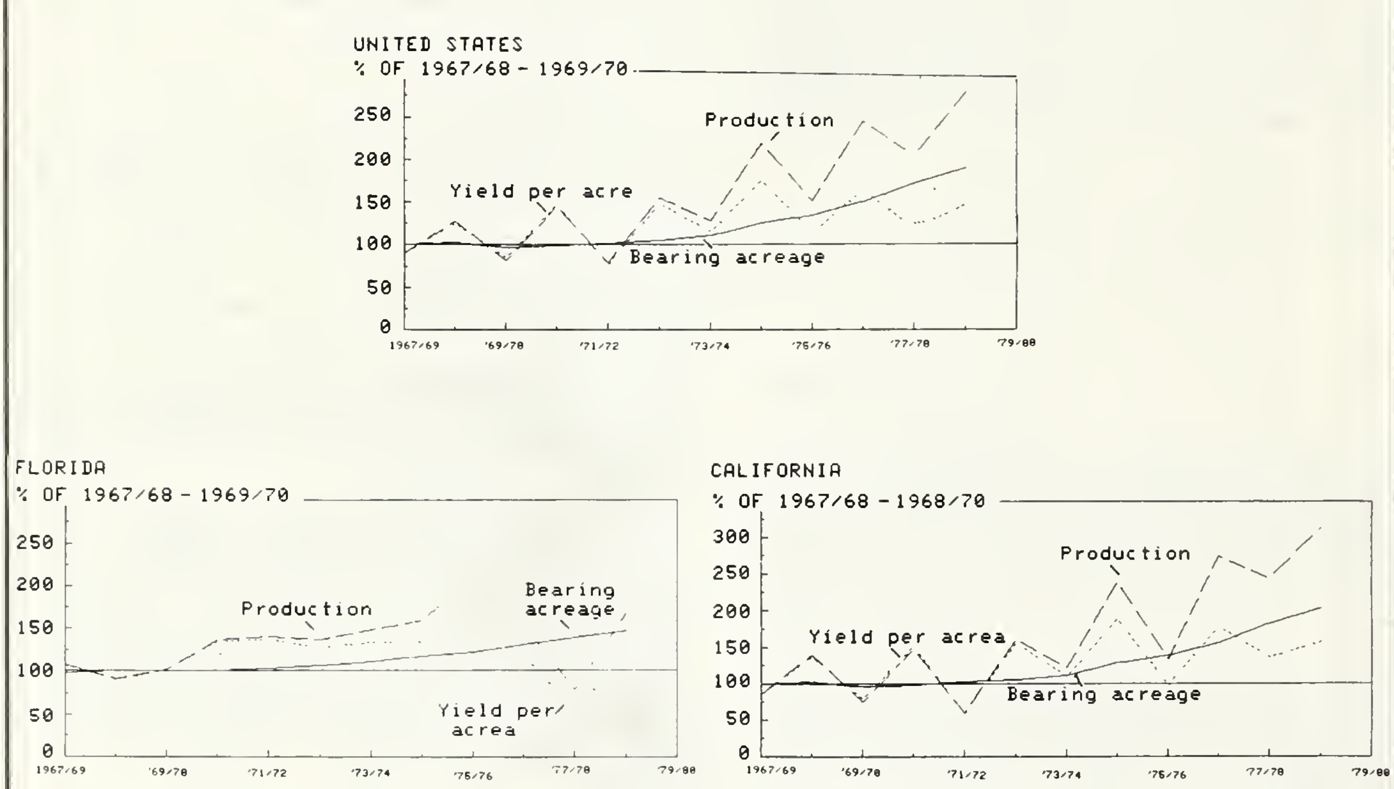
During the 1978/79 season (November-October), U.S. exports of avocados totaled 7,860 metric tons, up 51 percent from the previous season. Canada, our leading customer, accounted for slightly more than 40 percent of total export. Exports to Latin America took almost 40 percent, as shipments to these areas showed sharp increases during the 1978/79 season. Shipments to Japan were also up sharply.

Bananas

U.S. imports of bananas during 1979 totaled 2.3 million metric tons, 4 percent above 1978. Imports from Honduras, our leading supplier, increased 15 percent from 1978 and accounted for almost 27 percent of the total imports, compared with 24 percent a year ago. Ecuador was second, accounting for approximately 22 percent. Costa Rica supplied about 19 percent of the total U.S. banana imports, down 7 percent from 1978.

Despite larger supplies, the 1979 BLS index of retail banana prices for all urban consumers averaged 207.7 (1967=100), up 10 percent from 1978.

AVOCADO: ACREAGE, YIELD, AND PRODUCTION



YEAR BEGINNING AS INDICATED

USDA

NEG. ESCS 221–80 (2)

Table 8—U.S. fresh banana imports by country of origin, calendar years, 1976-79

Country	1976	1977	1978	1979
	1,000 metric tons			
Colombia	111.3	105.5	174.7	199.9
Costa Rica	695.6	556.0	485.1	452.3
Ecuador	396.3	441.3	516.6	506.1
Guatemala	234.3	214.7	169.8	160.2
Honduras	485.4	512.1	540.6	621.6
Nicaragua	111.1	104.1	126.8	108.3
Panama	57.1	142.7	188.4	261.3
Other	11.9	40.4	35.6	28.1
Total	2,103.0	2,116.8	2,237.6	2,337.8

Source: Bureau of the Census, U.S. Department of Commerce.

However, the January 1980 index declined to 221.9 (1967=100) from 225.2 in December 1979, but was still 23.8 percent above a year ago. The BLS wholesale price index averaged 205.8 (1967=100) during 1979, up almost 14 percent from 1978. The 1979 wholesale price index ranged from a low of 173.4 in January to a high of 239 in June. The index rose to 253.9 in January 1980, and this rise will be reflected at the retail level. However, with larger supplies of apples and oranges, retail banana prices will increase only moderately in the months ahead.

Grapes

Record Crop

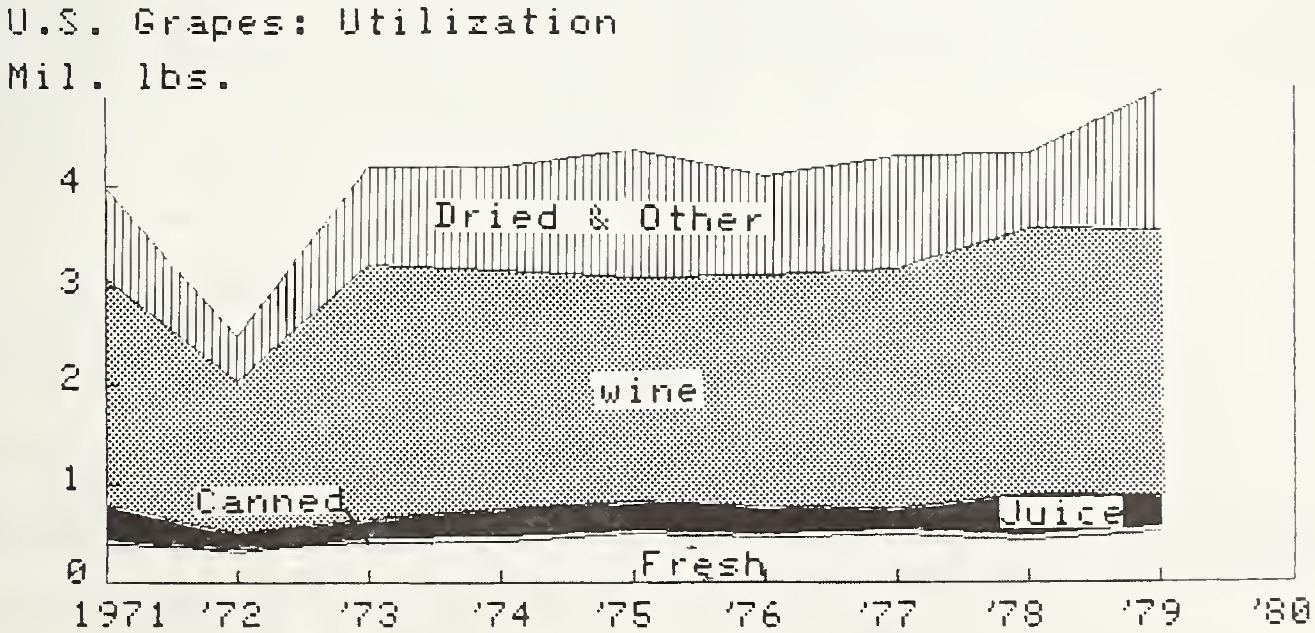
The U.S. produced a record 4.92 million tons (4.47 million metric tons) of grapes in 1979, of which all but 300 tons were utilized. The crop was 8 percent larger than last year, due almost entirely to a 12-percent increase in California production.

California's grape output was 4.5 million tons—91 percent of the U.S. crop. The raisin variety grape harvest at 2.3 million tons, was 20 percent above 1978. Wine-variety production continued to increase to a record 1.8 million tons, 4 percent larger. Output of table varieties at 413,000 tons, is up 5 percent from 1978.

Production of grapes in other States totaled 431,000 tons, a 22-percent decrease from 1978. All major producing States shared the decrease with the grape crop in Washington down 45 percent from 1978 because of the adverse weather last winter and summer.

Utilization of the 1979 Crop

The amount of U.S. grapes crushed for wine in 1979 was 2.7 million tons, almost the same as 1978, but its share of the crop dropped from 58 percent to 54 percent. In California, slightly more than 95 percent of the wine varieties was crushed and the remainder was shipped fresh. The total tonnage of wine varieties crushed increased 3 percent from 1978. In contrast, the total tonnage as well as the proportion of both raisin and table varieties crushed for wines in 1979 decreased from a year ago. Raisin production is up 74 percent from the severely rain damaged 1978 crop and the 1978 estimate includes a substantial quantity of damaged raisin that was not suitable for food use. Raisin production, the second most important outlet for grapes, accounted for 28 percent of the 1979 U.S. grape crop. Fresh usage increased 15 percent but with the large crop it represented only 10 percent of the U.S. grape crop, compared with 15 percent a year ago. Likewise, the proportion of the remaining grapes used for canning, juice, jam, and jelly, etc. declined to 8 percent from 10 percent in 1978.



Larger Wine Shipments

Total shipments of wines from California in 1979 reached 314.2 million gallons, up 5.2 percent from a year ago. Because of larger inventories, wine prices are near last year's levels. In mid February, regular and pale dry sherry in tank car lots before tax price was $1.80-$1.85 a gallon. With larger inventories, wine prices are expected to remain steady.

Grower Prices Generally Lower

Prices received by grape growers averaged slightly lower in 1979 than in 1978 as sharply lower prices for fresh use more than offset slightly higher prices for processing use. In California, the average 1979 price received by growers for fresh market grapes was estimated at $401 per ton, compared with $483 during 1978. The average 1979 price received by growers for California grapes crushed for wine was $185 per ton, down slightly from $188 a year earlier. The price for raisin varieties was estimated at $242 a ton, $1 less than in 1978. Because of sharply smaller crops, grape prices in several other States, were higher in 1979 than a year earlier. Grower prices in Washington, a major Concord producing State, averaged $205 per ton, up from $191 in 1978. Michigan growers also recorded higher grape prices, while prices in New York and Pennsylvania were down moderately.

Pears

Record Pear Crop

A record 846,300 tons (768,000 metric tons) of pears were utilized in 1979, an increase of 16 percent from 1978. Utilized production in the three Pacific Coast States at 800,600 tons, accounted for 95 percent of the total utilized crop, and was up 16 percent from 1978 with increases recorded for all the States. Washington produced its second consecutive record crop, 247,300 tons, as a 15-percent increase in Bartlett production more than offset the 16-percent decrease for pears other than Bartletts.

Utilized production of Bartletts in the Pacific Coast States totaled 589,300 tons in 1979, 26 percent above 1978's small crop. Utilized production of other varieties, at 211,300 tons, was down slightly from last year and accounted for 25 percent of the pear crop, compared with 30 percent last year.

Because of the record crop, utilization of pears for both fresh and processing was above 1978. Fresh utilization increased only slightly, but its share declined to 36 percent from 41 percent in 1978. The sharp increase in processing use of all pears was mainly attributed to the larger quantity of Bartletts processed since a larger pack of canned pears was needed to replenish stocks. Consequently, processing use of Bartletts in the Pacific Coast States accounted for 82 percent of

Table 9—Pears: Utilized production by States and Pacific Coast, variety composition, 1977, 1978, and 1979

State	1977	1978	1979
	Tons		
Connecticut	1,500	1,900	1,800
New York	16,000	18,500	17,700
Pennsylvania	4,700	3,300	2,800
Michigan	12,000	13,000	14,000
Idaho	1,800	(1)	(1)
Colorado	6,000	1,950	4,400
Utah	4,900	2,600	5,000
Washington	224,000	246,000	247,300
Oregon	179,000	151,500	188,000
California	334,600	288,300	365,300
United States	784,500	727,050	846,300

Pacific Coast	1977	1978	1979
	Tons		
Washington:			
Bartlett	138,000	132,000	151,300
Other	86,000	114,000	96,000
Total	224,000	246,000	247,300
Oregon:			
Bartlett	79,000	55,500	83,000
Other	100,000	96,000	105,000
Total	179,000	151,500	188,000
California:			
Bartlett	326,000	281,000	355,000
Other	8,600	7,300	10,300
Total	334,600	288,300	365,300
3 States:			
Bartlett	543,000	468,500	589,300
Other	194,600	217,300	211,300
Total	737,600	685,800	800,600

[1] Estimates discontinued after 1977 crop.

Source: Noncitrus Fruit and Nuts Annual, CRB, ESCS.

that variety in 1979, compared with 80 percent a year ago. Although the total quantity of pears for other varieties used for processing was relatively small, the proportion was up from 19 percent in 1978 to 21 percent in 1979.

Stocks Sharply Lower

Good demand, combined with the smaller winter pear crop, has resulted in cold storage holdings of pears sharply smaller than a year ago. At the beginning of February, cold storage stocks of D'Anjou and Bosc varieties were 20 percent smaller.

In response to smaller available supplies, f.o.b. prices for D'Anjou pears have been substantially above year-earlier levels. In mid-February, f.o.b. prices for D'Anjou pears at Yakima Valley-Wenatchee, Washington were quoted at $12.50 per box, compared with $10.05 a year ago. In view of smaller cold storage holdings, fresh pear prices are expected to continue to advance through this season.

The 1979 U.S. season average price to growers for the fresh pear crop is tentatively estimated at $272 per ton, up slightly from last year. The increase is attributed to the moderately higher prices for "other" varieties used for fresh which more than offset the decreases in prices for fresh Bartletts. In addition, grower prices for Bartletts used for processing also averaged moderately lower. Consequently, the average price of Bartletts for all uses is estimated at $191 per ton, down from $212 in 1978. The 1979 U.S. average pear price to growers for all uses is estimated at $205 per ton, down 7 percent from 1978.

Foreign Trade Encouraging

U.S. exports of fresh pears during July-December 1979 totaled 26,176 metric tons, an increase of 8 percent from the same period in 1978. Most of the increases was accounted for by Canada. Canada, the largest foreign buyer of U.S. fresh pears, purchased 12,545 metric tons, 41 percent larger than a year earlier. The 1979 Canadian pear crop was forecast to be almost 5 percent smaller.

Total U.S. imports of fresh pears during 1979 totaled 6,777 metric tons, up almost 20 percent from the previous year. Shipments from Australia, our major foreign supplier, increased moderately. Chile, another large supplier of fresh pears, increased its shipments to the U.S. by 43 percent from 1978. The combined shipments from these two countries accounted for over 85 percent of total U.S. pear imports.

Strawberries

U.S. commercial strawberry production totaled 637.7 million pounds in 1979, down 2 percent from the previous year. The decrease resulted from smaller harvested acreage, while average yield per acre was up slightly. Production was mixed among States. Winter strawberry production in Florida, accounting for 6 percent of the U.S. crop, was up 32 percent. Larger harvested acreage combined with higher yield contributed to sharply larger production in that State. However, California, which accounted for three-fourths of the U.S. crop, registered a moderate decline. Although yield per acre averaged moderately higher during 1979, it was more than offset by a substantially smaller harvested acreage. Moderate to substantial decreases in production were also recorded for Michigan and Washington, while Oregon had a sharply larger crop.

Because of the smaller crop in California, strawberries used for fresh market were down moderately from 1978. Slightly more than two-thirds of the U.S. strawberries went to the fresh market, compared with almost three-fourth a year earlier. The smaller crop, combined with higher priced imported strawberries, contributed to sharply higher prices. U.S. grower prices for fresh market strawberries were up 20 percent to $42.80 per cwt., while grower prices of strawberries for processing use averaged $28.50 per cwt., up 52 percent from 1978.

Table 10—Pear cold storage holdings at end of month

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Million pounds											
1977	178	127	94	52	24	(1)	48	160	399	239	205	162
1978	106	56	23	4	(1)	—	4	54	464	280	228	195
1979	134	84	49	22	5	—	2	92	428	252	214	158
1980	107											

[1] Less than 1 million lb.

Source: Cold Storage, CRB, ESCS.

Total Strawberry Imports Up Moderately

The 1979 imports of fresh stawberries totaled 31 million pounds, 8 percent below 1978, while total imports of frozen strawberries increased to 112.2 million pounds, up 15 percent from 1978. Most imports for both items originate in Mexico. However, imports of frozen strawberries have rebounded rapidly from the low of 49.6 million pounds in 1976, but were still below the record quantity imported in 1974.

Table 11—U.S. strawberry imports

January-December	Fresh	Frozen
	Million pounds	
1974	43.7	117.1
1975	31.2	97.5
1976	21.6	49.6
1977	24.7	97.0
1978	33.7	97.6
1979	31.0	112.2

Source: Foreign Agricultural Service.

1980 Winter Crop Prospects

The Florida winter strawberry acreage for 1980 is currently estimated at 2,400 acres, the same as a year ago. Plants are growing well, and fruit set and blooms are good. Light harvest was underway in early January. Florida's winter crop normally accounts for approximately 4 to 6 percent of U.S. annual production. Shipments through mid-February were near last season's pace. Opening prices at the shipping point were quoted at $11.00 per 12-pint at Central Florida, compared with $6.63 a year ago. With increased supplies, prices have declined sharply, but were still substantially higher in mid-February. Supplies of early spring fresh strawberries are likely to be reduced because of the damage from the recent storm in Southern California and the freeze in Florida.

PROCESSED NONCITRUS

It appears that larger crops of most noncitrus fruit in 1979 have led to larger packs of noncitrus fruit during the 1979/80 season, although the total pack data for some processed noncitrus are not available. Thus, even with the smaller carryover at the beginning of the season, supplies of most canned fruit are moderately to substantially larger. Despite larger supplies, prices for most items have remained above a year ago. While shipments have lagged year-earlier levels. Supplies of raisins are sharply above a year ago when the heavy rain in September 1978 seriously damaged the raisins in California. Movement of raisins has been strong in response to sharply lower prices. Supplies of frozen fruits and berries are generally larger than a year earlier due primarily to sharply larger stocks of frozen strawberries.

Canned

The 1979/80 pack of most canned fruit are moderately to sharply larger than last season, because of the larger noncitrus crop in California. Thus, even with depleted stocks of some items at the beginning of the season, the larger pack led to supplies of most canned fruit well above year-earlier levels. Larger supplies of fruit cocktail, clingstone peaches, pears, and apricots were chiefly responsible for the increase.

The canning season for apples and pineapples is still in progress. With the larger crops, this season's pack of all canned apple products is expected to be larger than in 1978/79. So far this season through January 1, the pack of canned apples and apple juice is up 17 and 8 percent from last season, respectively, while that of canned applesauce is only slightly larger. Data for comparing the canned pineapple product pack to earlier seasons are not available.

Movement of canned fruit is generally behind last year's pace. Consumers may be substituting citrus fruit for the high-priced canned fruit items. Thus, supplies for the remainder of 1979/80 will be ample, with January 1 stocks well above year-earlier levels. In order to stimulate sales, the packers have offered promotional allowances for several canned fruit.

U.S. exports of canned noncitrus fruit through December 1979 of this season showed a mixed picture. Exports of canned apricots, tart cherries, peaches, and pineapples were below a year ago, while those of canned Maraschino and sweet cherries, pears and fruit cocktail were larger. Higher prices and larger foreign supplies of several canned fruit items may have contributed to weak export markets.

Because of the price increases of several items, the January 1980 wholesale price index of canned fruit as reported by BLS advanced to 226.8 (1967=100) from 223.1 in December 1979 and was 8 percent above a year ago. With canners' stocks generally larger, prices may weaken somewhat if movement remains slow.

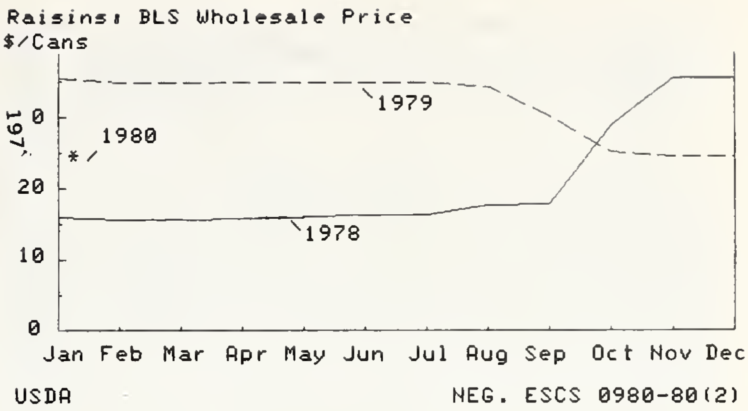
Dried

U.S. dried fruit production for the 1979/80 season was sharply above that of the preceding season, mainly because of the sharp gain in raisin pack.

Raisins are the leading dried fruit with all domestic output coming from California. Deliveries of California raisins to handlers through February 2, 1980 totaled 301,755 tons, compared with 77,273 tons during the comparable period last season. Even with the much smaller carryover, the total 1979/80 supply is way above year-earlier levels. Because of sharply lower prices, total shipments so far this season (September-December) were running well ahead of last season's pace. Exports almost doubled from last year. The outlook for the current season appears favorable, since prices have been far below those of other major producing countries.

Since October 1979, the larger supplies have pushed wholesale prices of raisins to levels below a year earlier. The January wholesale price was $24.38 per case (24/15 oz.), compared with $35.52 during January 1979.

The output of prunes was slightly higher in 1979. An estimated 133,000 tons (dried basis) were produced in California, up 1 percent from the previous year. With the carryover stocks also up slightly, the total supply for the season is also up slightly from last season. In response to higher prices, movement of prunes during the first 6 months of this season through January was considerable less than the corresponding period a year ago. Movement to both domestic and foreign markets registered declines. Reduced exports were indicated for almost all countries. Italy led the decline. Larger world prune output and higher prices are the primary reason for the reduced exports. With the smaller shipments, the remaining supply of dried prunes at the end of January was considerably larger than the preceding year. To stimulate sales, the packers have offered promotional allowances to reduce list prices.



The January 1980 BLS wholesale price declined to $17.40 per case (24/1 pound packages) from $17.77 in December 1979, but was still almost 14 percent above year-earlier levels. The average grower price for the 1979 prune crop has been estimated at $850 per ton (dried basis), compared with $696 in 1978.

Frozen

The total supply of frozen noncitrus fruits and berries in cold storage as of February 1 was about 3 percent above the year-earlier volume. Larger stocks of strawberries, blueberries, boysenberries,

Table 12—Stocks of frozen fruit: End of January 1977-80

Frozen fruit	1977	1978	1979	1980[1]
	Thousand pounds			
Apples	98,446	103,575	90,220	83,349
Apricots	11,608	11,420	8,916	8,947
Blackberries	11,014	7,585	7,777	7,094
Blueberries	23,214	21,802	32,503	33,498
Boysenberries	2,311	2,200	1,623	1,934
Cherries, tart (RSP)	[2] 42,262	44,917	48,896	47,712
Cherries, sweet		13,704	12,355	11,502
Grapes	6,910	7,465	7,995	8,202
Peaches	52,429	61,883	45,420	41,567
Raspberries, Red	12,182	[3] 11,847	[3] 12,483	[4] 13,569
Raspberries, Black	1,491			
Strawberries	92,157	126,208	94,773	117,481
Other frozen fruits	144,970	136,457	135,016	[5] 139,953
Total frozen fruits	498,994	549,063	497,977	514,808

[1] Preliminary. [2] Includes both sweet and tart cherries. [3] Red and black raspberries. [4] Red raspberries only. [5] Includes black raspberries as of January, 1980.

Source: Cold Storage, CRB, ESCS.

grapes, and raspberries more than offset decreases in apples, blackberries, cherries, and peaches.

Stocks of strawberries, the leading frozen fruit, were up 24 percent from a year ago. The larger 1979 California pack and larger imports contributed to the increase. Most of U.S. imports are from Mexico, with a small quantity coming from Poland. Because of larger supplies, prices have been steady during last few months. The BLS January 1980 wholesale price of frozen strawberries averaged $6.05 per dozen 10-ounce packages, 16 percent above a year ago. Prices are likely to remain steady or decline slightly during the remainder of the season if demand does not strengthen.

In contrast, because of the smaller crop in Michigan, total frozen cherry pack in 1979 amounted to 116.3 million pounds, down 8 percent from 1978. Apparent disappearance so far this season is relatively good resulting in February 1 stocks 2 percent below the January 1979 volume.

TREE NUTS

The estimated production of six major domestic tree nuts in 1979 at 657,500 tons, was up 45 percent from 1978 as larger production of almonds, Macadamia nuts, pistachios, and walnuts more than offset smaller crops of filberts and pecans. In view of a 6-percent increase in 1979 bearing acreage for almonds, pistachios, and walnuts, continued increases in tree nut production are expected.

Despite larger production, prices for almonds, Macadamia nuts, and pistachios are higher than a year ago. Consequently, the value of production of all six tree nuts is estimated at $902 million, an increase of 42 percent from 1978.

Almonds

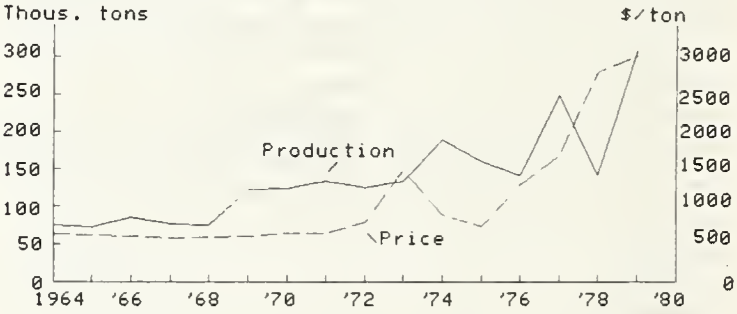
The 1979 California production of almonds amounted to 308,300 tons (in-shell basis), more than double last year's short crop. Supplies at the beginning of this marketing season were short due to the small carryin. Despite higher prices, strong demand in foreign markets during the first 7 months (July 1979-January 1980) of the marketing season has brought U.S. shipments up 21 percent from the corresponding period a year ago. The increases in demand were primarily reflected in the shelled market. Shipments to domestic markets got off a slow start, but during the period from November 1979 through January 1980 they were up 24 percent from the same period last year.

According to the Almond Board of California, total export shipments of almond and almond products during the first 7 months of the season totaled 133 million pounds, up 42 percent from last season. The increased exports were due primarily to increased supply of U.S. almonds and short crops in Europe. West Germany, the largest customer, showed the largest increase with exports totaling 55 million pounds, an increase of 56 percent from a year earlier. The strong demand is generally attributed to sharply smaller crops in Spain and Italy, the principal almond producing countries in Europe. Exports to Russia also showed a sharp increase.

Total movement of almonds is expected to continue to expand in foreign markets, particularly in Europe, since prices of almonds in Italy and Spain have been substantially above U.S. almond prices. Shipments to the domestic market are expected to be up sharply since unshipped sales through January were up 54 percent from last year. Thus, the carryout at the end of the season is expected to be small.

In response to good demand, the 1979 season average grower price for almonds has been estimated at $1.51 per pound (kernal weight), compared with $1.40 in 1978. The larger crop and higher prices have contributed to sharply higher value of production at $558.7 million in 1979 up from $253.4 million in 1978.

U.S. Almond Production & Prices Received by Growers



USDA NEG. ESCS 973-80 (2)

Pecans

The 1979 U.S. pecan crop is estimated at 221 million pounds (100,000 metric tons), 12 percent less than was harvested in 1978. The decline was attributed to the sharp decrease in production of improved varieties which more than offset the sharply larger Native and Seedling Crop. Improved varieties, at 95.3 million pounds accounted for 43 percent of production compared with 66 percent in 1978. Sharply smaller production is shared by most States. Georgia normally is the leading pecan producing State, but in 1979 Texas took the lead. The Georgia crop is estimated at 65 million pounds, compared with 135 million pounds in 1978. The sharply smaller crop was attributed to the September storm which broke many limbs and caused crop damage in the Southeastern section of the State. In addition, due to the high moisture this season, scab was also a significant problem.

Cold storage holdings of in-shell pecans as of October 1 were about 66 million pounds, compared with 28 million pounds a year ago. But shelled pecans in cold storage, although a relatively small quantity, were also sharply larger than a year ago.

The preliminary estimate of the season-average price received by pecan growers is 54.5 cents per pound, compared with 60.5 cents in 1978. Lower prices were reported for the Native and Seedling Crop, more than offsetting higher prices for improved varieties.

Walnuts

The 1979 California walnut crop totaled 205,000 tons (186,000 metric tons), up 28 percent from last year's short crop. The larger crop reflected new acreage coming into bearing and excellent growing weather.

According to the Walnut Marketing Board, shipments of in-shell walnuts during the first 6 months (August-January) of the 1979/80 season totaled 128,030 million pounds, an increase of 26 percent from last season. Larger shipments were recorded for both domestic and foreign markets, but exports increased 33 percent from last season and accounted for 59 percent, compared with 57 percent a year ago. Shipments of shelled walnuts during the same period showed an increase of 4 percent from last season with 93 percent used in the domestic market. Most of the exports were shipped to European markets. The principal European outlets for our walnuts so far this season have been Germany and Spain. A few more walnuts may be exported because of additional availability, competitive prices in relation to other nuts, and the competitive position of the dollar overseas. Inshell exports through December 1979 usually are more than 90 percent of the season total.

With this rate of shipment, unsold inventories held by walnut handlers as of February 1, 1980 were not burdensome. The 1979 season-average price to growers is tentatively estimated at $820 per ton (in-shell), compared with $1,264 in 1978 and $731 in 1977.

Other Tree Nuts

The 1979 filbert production in Washington and Oregon totaled 12,500 tons (11,300 metric tons) with smaller crops in both States—11 percent below 1978 but 6 percent above the 1977 crop. Because of higher prices, total movement through January 1 was down slightly. The 1979 season-average grower price is tentatively estimated at $941 per ton (in-shell), compared with $806 for the 1978 crop.

Macadamia nut production in Hawaii in 1979 totaled 25 million pounds (11,300 metric tons), 19 percent above the 1978 crop and 27 percent more than 1977. Macadamia nut production is expected to continue an upward trend since bearing acreage has increased sharply. The 1978 bearing acreage is estimated at 9,200 acres, up from 5,760 acres in 1974. Despite larger production, the 1979 season-average grower price is tentatively estimated at 62 cents per pound (in-shell), compared with 53.8 cents for the 1978 crop and 40.8 cents in 1977.

Pistachio production in California in 1979 jumped to 17.2 million pounds (7,800 metric tons), almost six times more than 1978. The trees are just coming into production, so a continued increase in production can be expected in the years ahead.

Although Iran normally leads pistachio production, it appears that Turkey will produce more in 1979/80. Severe frost in the spring reportedly has sharply reduced Iran's 1979/80 pistachio output to only 10,000 tons (in-shell) from a near-record crop of 60,000 tons the previous year. The Turkey's pistachio crop is estimated at a record 20,000 tons, compared with only 5,000 tons last year. In spite of the record crop, the Turkey Ministry of Commerce has accepted the Union of Pistachio Marketing Cooperatives' proposal to set the 1979 support price at about $4.79 per kilogram, an increase of about 173 percent from year-earlier levels. The action, along with the current Iranian situation has strengthened pistachio prices in the world market. The 1979 grower prices for California pistachios is tentatively estimated at $1.59 per pound, compared with $1.24 for the 1978 crop.

GEOGRAPHIC DISTRIBUTION OF FRUIT AND NUT PRODUCTION AND VALUE

Data for 1978 and preliminary 1979 utilized production and value of fruits, berries, and tree nuts grown in the United States are reported by States in tables 13-17 of this issue.

Utilized production of fruits and berries decreased slightly to 26.3 million tons as smaller production of citrus fruit more than offset the larger noncitrus crop. Prices were generally higher in 1979 than in 1978, particularly for citrus fruit. Consequently, total farm value increased to $5.2 billion from $4.8 billion in 1978. Citrus production accounted for 50.5 percent of the total fruit tonnage harvested, down from 54 percent in 1978. However, because of sharply higher prices, citrus's share of total value of all fruits increased from 33 percent in 1978 to 35 percent in 1979. Leading crops in order of tonnage were oranges at 9.2 million tons, grapes at 4.9 million tons, apples at 3.9 million tons, grapefruit at 2.7 million tons and peaches at 1.5 million tons. Ranking the crops by value shows oranges at $1.4 billion, grapes at $1.1 billion, apples at $825 million, peaches at $336 million, and strawberries at $244 million.

Florida is the leading State in total fruit tonnage produced, but California is the top State in total value of production. Together, California and Florida accounted for about three-fourths of U.S. fruit tonnage produced and more than two-thirds of total value. In terms of value, California accounted for 43 percent, followed by Florida at 26 percent, Washington at 8 percent, and Michigan and New York both at 3 percent.

Edible tree nut production, at 657,500 tons, had a total value of $902 million. California, the leading producing State, accounted for 80 percent of the output and more than four-fifths of the total value.

Table 13—Fruit and edible tree nuts: Utilized production and value, principal States and United States, 1978 and 1979[1]

Year and State	Noncitrus fruits		Citrus fruits		All fruits		Tree nuts		All fruits and tree nuts	
	Production	Value	Production	Value	Production	Value	Production	Value	Production	Value
	1,000 tons	*1,000 dollars*	*1,000 tons*	*1,000 dollars*	*1,000 tons*	*1,000 dollars*	*1,000 tons*	*1,000 dollars*	*1,000 tons*	*1,000 dollars*
1978:										
CALIF. . .	6,480.3	1,652 842	2,696.0	380,659	9,176.3	2,033,501	304.0	458,740	9,480.3	2,492,241
FLA.	37.6	25,886	10,348.0	1,121,940	10,385.6	1,147,826	2.1	2,366	10,387.7	1,150,192
WASH. . .	1,634.8	436,377	—	—	1,634.8	436,377	.4	292	1,635.2	436,699
N.Y.	770.6	157,837	—	—	770.6	157,837	—	—	770.6	157,837
OREG. . .	323.8	112,281	—	—	323.8	112,281	13.7	11,029	337.5	123,310
MICH . . .	697.4	191,710	—	—	697.4	191,710	—	—	697.4	191,710
PA.	308.6	68,450	—	—	308.6	68,450	—	—	308.6	68,450
GA.	71.0	21,250	—	—	71.0	21,250	67.5	78,000	138.5	99,250
TEX	18.5	6,290	736.0	44,294	754.5	50,584	13.0	17,700	767.5	68,284
ARIZ. . . .	14.3	13,485	475.0	45,785	489.3	59,270	—	—	489.3	59,270
Other States . .	1,775.6	493,269	—	—	1,775.6	493,269	53.3	64,951	1,828.9	558,220
U.S. .	12,132.5	3,179,677	14,255.0	1,592,678	26,387.5	4,772,355	454.0	633,078	26,841.5	5,405,433
1979:										
CALIF. . .	7,315.2	1,791,267	2,166.0	424,383	9,481.2	2,215,650	521.9	754,148	10,003.1	2,969,798
FLA.	19.2	22,157	10,101.0	1,296,077	10,120.2	1,318,234	1.3	1,635	10,121.5	1,319,869
WASH. . .	1,701.9	432,169	—	—	1,701.9	432,169	.3	285	1,702.2	432,454
N.Y.	678.0	155,480	—	—	678.0	155,480	—	—	678.0	155,480
OREG. . .	374.1	123,382	—	—	374.1	123,382	12.2	11,480	386.3	134,862
MICH. . . .	543.3	164,198	—	—	543.3	164,198	—	—	543.3	164,198
PA.	361.6	78,619	—	—	361.6	78,619	—	—	361.6	78,619
GA.	85.0	19,175	—	—	85.0	19,175	32.5	44,250	117.5	63,425
TEX.	17.0	6,800	632.0	44,593	649.0	51,393	40.0	35,750	689.0	87,143
ARIZ. . . .	13.5	12,555	407.0	49,447	420.5	62,002	—	—	420.5	62,002
Other States . .	1,873.2	524,549	—	—	1,873.2	524,549	49.3	54,318	1,922.5	578,867
U.S. .	12,982.0	3,330,351	43,306.0	1,814,500	26,288.0	5,144,851	657.5	901,866	26,945.5	6,046,717

[1] Preliminary.

Table 14—Fruit and edible tree nuts: Utilized production, by States, United States, 1978

State	Noncitrus fruits												
	Apples	Apricots	Cherries		Cranberries	Grapes	Peaches	Pears	Prunes and plums	Strawberries	Other[1]	Total	
			Sweet	Tart								Quantity	Percent of U.S.
	1,000 tons												*Percent*
Maine	37.5	—	—	—	—	—	—	—	—	—	9.1	46.6	0.4
N.H.	30.0	—	—	—	—	—	—	—	—	—	—	30.0	.2
Vt.	24.5	—	—	—	—	—	—	—	—	—	—	24.5	.2
Mass.	52.5	—	—	—	59.0	—	1.8	—	—	—	—	113.3	.9
R.I.	3.0	—	—	—	—	—	—	—	—	—	—	3.0	(2)
Conn.	25.0	—	—	—	—	—	3.2	1.9	—	—	—	30.1	.2
N.Y.	540.0	—	3.5	9.4	—	188.0	8.0	18.5	—	3.2	—	770.6	6.4
N.J.	45.0	—	—	—	11.2	—	35.0	—	—	1.8	11.2	104.2	.9
Pa.	200.0	—	.8	3.1	—	57.5	42.5	3.3	—	1.4	—	308.6	2.5
Ohio	67.7	—	—	.1	—	12.0	2.5	—	—	4.4	—	86.7	.7
Ind.	29.9	—	—	—	—	—	2.5	—	—	—	—	32.4	.3
Ill.	44.5	—	—	—	—	—	8.0	—	—	—	—	52.5	.4
Mich.	445.0	—	35.0	64.0	—	67.5	30.0	13.0	24.0	7.7	11.2	697.4	5.8
Wis.	30.5	—	—	5.8	41.1	—	—	—	—	1.9	—	79.3	.6
Minn.	14.0	—	—	—	—	—	—	—	—	—	—	14.0	.1
Iowa	4.5	—	—	—	—	—	—	—	—	—	—	4.5	(2)
Mo.	20.0	—	—	—	—	3.3	7.0	—	—	—	—	30.3	.2
Kans.	5.0	—	—	—	—	—	2.5	—	—	—	—	7.5	.1
Del.	7.3	—	—	—	—	—	1.2	—	—	—	—	8.5	.1
Md.	41.9	—	—	—	—	—	12.0	—	—	—	—	53.9	.4
Va.	257.5	—	—	—	—	—	20.0	—	—	—	—	277.5	2.3
W. Va.	147.5	—	—	—	—	—	12.5	—	—	—	—	160.0	1.3
N.C.	161.0	—	—	—	—	5.9	22.5	—	—	1.6	3.9	194.9	1.6
S.C.	11.0	—	—	—	—	[3]5.1	150.0	—	—	—	—	166.1	1.4
Ga.	11.0	—	—	—	—	—	60.0	—	—	—	—	71.0	.6
Fla.	—	—	—	—	—	—	—	—	—	14.5	23.1	37.6	.3
Ky.	7.1	—	—	—	—	—	5.5	—	—	—	—	12.6	.1
Tenn.	3.9	—	—	—	—	—	4.2	—	—	—	—	8.1	.1
Ala.	—	—	—	—	—	—	7.5	—	—	—	—	7.5	.1
Miss.	—	—	—	—	—	—	2.0	—	—	—	—	2.0	(2)
Ark.	6.5	—	—	—	—	8.2	18.0	—	—	2.1	—	34.8	.3
La.	—	—	—	—	—	—	3.2	—	—	2.6	—	5.8	.1
Okla.	—	—	—	—	—	—	4.2	—	—	—	—	4.2	(2)
Texas	—	—	—	—	—	—	18.5	—	—	—	—	18.5	.2
Mont.	—	—	1.8	—	—	—	—	—	—	—	—	1.8	(2)
Idaho	65.0	—	2.5	—	—	—	5.5	—	6.9	—	—	79.9	.7
Colo.	18.0	—	.2	.7	—	—	3.6	2.0	—	—	—	24.5	.2
N. Mex.	8.5	—	—	—	—	—	—	—	—	—	—	8.5	.1
Ariz.	—	—	—	—	—	14.3	—	—	—	—	—	14.3	.1
Utah	17.5	0.6	3.0	5.6	—	—	7.5	2.6	—	—	—	36.8	.3
Wash.	1,074.0	2.7	59.3	—	7.0	187.0	19.0	246.0	21.3	8.8	9.7	1,634.8	13.5
Ore.	71.0	—	35.0	1.9	4.7	—	6.5	151.5	17.0	17.0	19.2	323.8	2.7
Calif.	250.0	123.0	14.0	—	—	3,769.0	752.0	288.3	564.5	258.0	461.5	6,480.3	53.4
Hawaii	—	—	—	—	—	—	—	—	—	—	29.7	29.7	.2
U.S.[4]	3,777.1	126.3	155.1	90.6	122.9	4,317.8	1,278.4	727.1	633.7	324.9	578.6	12,132.5	100.0

See footnotes at end of table.

Table 14—Fruit and edible tree nuts: Utilized production, by States, United States, 1978—Continued

State	Citrus fruits[5]						Total all fruits		Tree nuts				Total of all fruits and tree nuts	
	Oranges	Grape-fruit	Lemons	Other[6]	Total		Quantity	Percent of U.S.	Pecans	Other[7]	Total		Quantity	Percent of U.S.
					Quantity	Percent of U.S.					Quantity	Percent of U.S.		
			1,000 tons			*Percent*	*1,000 tons*	*Percent*		*1,000 tons*		*Percent*	*1,000 tons*	*Percent*
Maine	—	—	—	—	—	—	46.6	0.2	—	—	—	—	46.6	0.2
N.H.	—	—	—	—	—	—	30.0	.1	—	—	—	—	30.0	.1
Vt.	—	—	—	—	—	—	24.5	.1	—	—	—	—	24.5	.1
Mass.	—	—	—	—	—	—	113.3	.4	—	—	—	—	113.3	.4
R.I.	—	—	—	—	—	—	3.0	(2)	—	—	—	—	3.0	(2)
Conn.	—	—	—	—	—	—	30.1	.1	—	—	—	—	30.1	.1
N.Y.	—	—	—	—	—	—	770.6	2.9	—	—	—	—	770.6	2.9
N.J.	—	—	—	—	—	—	104.2	.4	—	—	—	—	104.2	.4
Pa.	—	—	—	—	—	—	308.6	1.2	—	—	—	—	308.6	1.2
Ohio	—	—	—	—	—	—	86.7	.3	—	—	—	—	86.7	.3
Ind.	—	—	—	—	—	—	32.4	.1	—	—	—	—	32.4	.1
Ill.	—	—	—	—	—	—	52.5	.2	—	—	—	—	52.5	.2
Mich.	—	—	—	—	—	—	697.4	2.6	—	—	—	—	697.4	2.6
Wis.	—	—	—	—	—	—	79.3	.3	—	—	—	—	79.3	.3
Minn.	—	—	—	—	—	—	14.0	.1	—	—	—	—	14.0	.1
Iowa	—	—	—	—	—	—	4.5	(2)	—	—	—	—	4.5	(2)
Mo.	—	—	—	—	—	—	30.3	.1	—	—	—	—	30.3	.1
Kans.	—	—	—	—	—	—	7.5	(2)	—	—	—	—	7.5	(2)
Del.	—	—	—	—	—	—	8.5	(2)	—	—	—	—	8.5	(2)
Md.	—	—	—	—	—	—	53.9	.2	—	—	—	—	53.9	.2
Va.	—	—	—	—	—	—	277.5	1.1	—	—	—	—	277.5	1.0
W. Va.	—	—	—	—	—	—	160.0	.6	—	—	—	—	160.0	.6
N.C.	—	—	—	—	—	—	194.9	.7	2.0	—	2.0	0.4	196.9	.7
S.C.	—	—	—	—	—	—	166.1	.6	3.0	—	3.0	.7	169.1	.6
Ga.	—	—	—	—	—	—	71.0	.3	67.5	—	67.5	14.9	138.5	.5
Fla.	7.552.0	2,184.0	—	612.0	10,348.0	72.6	10,385.6	39.4	2.1	—	2.1	.5	10,387.7	38.7
Ky.	—	—	—	—	—	—	12.6	.1	—	—	—	—	12.6	.1
Tenn.	—	—	—	—	—	—	8.1	(2)	—	—	—	—	8.1	(2)
Ala.	—	—	—	—	—	—	7.5	(2)	11.0	—	11.0	2.4	18.5	.1
Miss.	—	—	—	—	—	—	2.0	(2)	5.0	—	5.0	1.1	7.0	(2)
Ark.	—	—	—	—	—	—	34.8	.1	2.0	—	2.0	.4	36.8	.1
La.	—	—	—	—	—	—	5.8	(2)	4.5	—	4.5	1.0	10.3	(2)
Okla.	—	—	—	—	—	—	4.2	(2)	7.8	—	7.8	1.7	12.0	(2)
Texas	260.0	476.0	—	—	736.0	5.2	754.5	2.9	13.0	—	13.0	2.9	767.5	2.9
Mont.	—	—	—	—	—	—	1.8	(2)	—	—	—	—	1.8	(2)
Idaho	—	—	—	—	—	—	79.9	.3	—	—	—	—	79.9	.3
Colo.	—	—	—	—	—	—	24.5	.1	—	—	—	—	24.5	.1
N. Mex.	—	—	—	—	—	—	8.5	(2)	7.5	—	7.5	1.7	16.0	.1
Ariz.	136.0	96.0	220.0	23.0	475.0	3.3	489.3	1.9	—	—	—	—	489.3	1.8
Utah	—	—	—	—	—	—	36.8	.1	—	—	—	—	36.8	.1
Wash.	—	—	—	—	—	—	1,634.8	6.3	—	0.4	.4	.1	1,635.2	6.1
Ore.	—	—	—	—	—	—	323.8	1.2	—	13.7	13.7	3.0	337.5	1.3
Calif.	1,598.0	274.0	771.0	53.0	2.696.0	18.9	9,176.3	34.9	—	304.0	304.0	66.9	9,480.3	35.4
Hawaii	—	—	—	—	—	—	29.7	.1	—	10.5	10.5	2.3	40.2	.2
U.S.[4]	9,546.0	3,030.0	991.0	688.0	14,255.0	100.0	26,387.5	100.0	125.4	328.6	454.0	100.0	26,841.5	100.0

[1] Avocado 1978/79 crop, bananas, bushberries, dates, figs, nectarines, olives, papayas, and pomegranates. [2] Less than 0.05 percent. [3] Includes Georgia. [4] Some United States totals do not add due to rounding. [5] 1977/78 crop. [6] Tangerines, limes, tangelos, and Temples. [7] Almond, filberts, Macadamia nuts, walnuts, and pistachios.

Sources: Noncitrus Fruit and Nuts Annual, Vegetable Report and Citrus Annual, CR8, ESCS.

Table 15—Fruit and edible tree nuts: Value of production, by States, United States, 1978

State	Noncitrus fruit												
	Apples	Apricots	Cherries		Cranberries	Grapes	Peaches	Pears	Prunes and plums	Strawberries	Other[1]	Total	
			Sweet	Tart								Value	Percent of U.S.
	1,000 dollars												*Percent*
Maine	9,900	—	—	—	—	—	—	—	—	—	9,231	19,131	0.6
N.H.	8,040	—	—	—	—	—	—	—	—	—	—	8,040	.3
Vt.	6,272	—	—	—	—	—	—	—	—	—	—	6,272	.2
Mass.	14,490	—	—	—	25,488	—	1,015	—	—	—	—	40,993	1.3
R.I.	846	—	—	—	—	—	—	—	—	—	—	846	(2)
Conn.	6,800	—	—	—	—	—	1,827	779	—	—	—	9,406	.3
N.Y.	91,800	—	1,901	8,108	—	45,872	2,960	3,793	—	3,403	—	157,837	5.0
N.J.	10,170	—	—	—	4,839	—	16,520	—	—	1,512	15,482	48,523	1.5
Pa.	35,600	—	711	2,585	—	13,340	13,430	944	—	1,840	—	68,450	1.5
Ohio	19,633	—	—	120	—	2,544	1,185	—	—	3,828	—	27,310	.9
Ind.	8,133	—	—	—	—	—	1,100	—	—	—	—	9,233	.3
Ill.	11,392	—	—	—	—	—	3,504	—	—	—	—	14,896	.5
Mich.	67,640	—	16,030	56,832	—	15,053	9,600	2,704	3,312	5,621	14,918	191,710	6.0
Wis.	7,381	—	—	5,244	17,509	—	—	—	—	1,824	—	31,958	1.0
Minn.	4,228	—	—	—	—	—	—	—	—	—	—	4,228	.1
Iowa	1,228	—	—	—	—	—	—	—	—	—	—	1,228	(2)
Mo.	6,120	—	—	—	—	762	2,240	—	—	—	—	9,122	.3
Kans.	1,110	—	—	—	—	—	880	—	—	—	—	1,990	.1
Del.	1,349	—	—	—	—	—	242	—	—	—	—	1,591	.1
Md.	8,705	—	—	—	—	—	3,192	—	—	—	—	11,897	.4
Va.	41,200	—	—	—	—	—	5,720	—	—	—	—	46,920	1.5
W. Va.	25,370	—	—	—	—	—	4,450	—	—	—	—	29,820	.9
N.C.	25,438	—	—	—	—	1,770	7,200	—	—	1,120	4,616	40,144	1.3
S.C.	2,574	—	—	—	—	[3]1,165	46,500	—	—	—	—	50,239	1.6
Ga.	2,530	—	—	—	—	—	18,720	—	—	—	—	21,250	.6
Fla.	—	—	—	—	—	—	—	—	—	16,646	9,240	25,886	.8
Ky.	1,789	—	—	—	—	—	2,200	—	—	—	—	3,989	.1
Tenn.	1,093	—	—	—	—	—	1,344	—	—	—	—	2,437	.1
Ala.	—	—	—	—	—	—	2,490	—	—	—	—	2,490	.1
Miss.	—	—	—	—	—	—	800	—	—	—	—	800	(2)
Ark.	1,417	—	—	—	—	1,779	4,500	—	—	1,260	—	8,956	.3
La.	—	—	—	—	—	—	1,300	—	—	2,030	—	3,330	.1
Okla.	—	—	—	—	—	—	1,207	—	—	—	—	1,207	(2)
Texas	—	—	—	—	—	—	6,290	—	—	—	—	6,290	.2
Mont.	—	—	1,297	—	—	—	—	—	—	—	—	1,297	(2)
Idaho	19,110	—	1,728	—	—	—	1,375	—	1,421	—	—	23,634	.7
Colo.	3,816	—	157	541	—	—	1,274	413	—	—	—	6,201	.2
N. Mex.	1,649	—	—	—	—	—	—	—	—	—	—	1,649	.1
Ariz.	—	—	—	—	—	13,485	—	—	—	—	—	13,485	.4
Utah	3,850	276	2,307	4,407	—	—	2,550	910	—	—	—	14,300	.4
Wash.	270,648	753	46,966	—	3,016	35,717	5,472	53,052	3,174	4,452	13,127	436,377	13.7
Ore.	15,762	—	22,050	1,497	2,051	—	2,327	33,575	2,890	9,183	22,946	112,281	3.5
Calif.	46,000	30,381	14,168	—	—	874,307	135,220	63,568	148,852	148,839	191,507	1,652,842	52.0
Hawaii	—	—	—	—	—	—	—	—	—	—	9,192	9,192	.3
U.S.[4]	783,083	31,410	107,315	79,334	52,903	1,005,794	308,634	159,738	159,649	201,558	290,259	3,179,677	100.0

See footnotes at end of table.

Table 15—Fruit and edible tree nuts: Value of production, by States, United States, 1978—Continued

State	Citrus fruit[5]						Total all fruit		Tree nuts				Total all fruit and tree nuts	
	Oranges	Grapefruit	Lemons	Other[6]	Total		Value	Percent of U.S.	Pecans	Other[7]	Total		Value	Percent of U.S.
					Value	Percent of U.S.					Value	Percent of U.S.		
	1,000 dollars					*Percent*	*1,000 dollars*	*Percent*	*1,000 dollars*			*Percent*	*1,000 dollars*	*Percent*
Maine	.	.	.	.	.	.	19,131	0.4	.	.	.	.	19,131	0.4
N.H.	.	.	.	.	.	.	8,040	.2	.	.	.	.	8,040	.1
Vt.	.	.	.	.	.	.	6,272	.	.	.	.	.	6,272	.1
Mass.	—	—	—	—	—	—	40,993	.9	—	—	—	—	40,993	.8
R.I.	—	—	—	—	—	—	846	(2)	—	—	—	—	846	(2)
Conn.	—	—	—	—	—	—	9,406	.2	—	—	—	—	9,406	.2
N.Y.	—	—	—	—	—	—	157,837	3.3	—	—	—	—	157,837	2.9
N.J.	—	—	—	—	—	—	48,523	1.0	—	—	—	—	48,523	.9
Pa.	—	—	—	—	—	—	68,450	1.4	—	—	—	—	68,450	1.3
Ohio	—	—	—	—	—	—	27,310	.6	—	—	—	—	27,310	.5
Ind.	—	—	—	—	—	—	9,233	.2	—	—	—	—	9,233	.2
Ill.	—	—	—	—	—	—	14,896	.3	—	—	—	—	14,896	.3
Mich.	—	—	—	—	—	—	191,710	4.0	—	—	—	—	191.710	3.5
Wis.	—	—	—	—	—	—	31,958	.7	—	—	—	—	31,958	.6
Minn.	—	—	—	—	—	—	4,228	.1	—	—	—	—	4,228	.1
Iowa	—	—	—	—	—	—	1,228	(2)	—	—	—	—	1,228	(2)
Mo.	—	—	—	—	—	—	9,122	.2	—	—	—	—	9,122	.2
Kans.	—	—	—	—	—	—	1,990	(2)	—	—	—	—	1,990	(2)
Oel.	—	—	—	—	—	—	1,591	(2)	—	—	—	—	1,591	(2)
Md.	—	—	—	—	—	—	11,897	.2	—	—	—	—	11,897	.2
Va.	—	—	—	—	—	—	46,920	1.0	—	—	—	—	46,920	.9
W. Va.	—	—	—	—	—	—	29,820	.6	—	—	—	—	29,820	.6
N.C.	—	—	—	—	—	—	40,144	.8	2,128	—	2,128	0.3	42,272	.8
S.C.	—	—	—	—	—	—	50,239	1.1	4,193	—	4,193	.7	54,432	1.0
Ga.	—	—	—	—	—	—	21,250	.4	78,000	—	78,000	12.3	99,250	1.8
Fla.	903,920	137,806	—	80,214	1,121,940	70.4	1,147,826	24.1	2,366	—	2,366	.4	1.150,192	21.2
Ky.	—	—	—	—	—	—	3,989	.1	—	—	—	—	3,989	.1
Tenn.	—	—	—	—	—	—	2,437	.1	—	—	—	—	2,437	(2)
Ala.	—	—	—	—	—	—	2,490	.1	12,053	—	12,053	1.9	14,534	.3
Miss.	—	—	—	—	—	—	800	(2)	5,940	—	5,940	.9	6,740	.1
Ark.	—	—	—	—	—	—	8,956	.2	2,610	—	2,610	.4	11,566	.2
La.	—	—	—	—	—	—	3,330	.1	6,150	—	6,150	1.0	9,480	.2
Okla.	—	—	—	—	—	—	1,207	(2)	9,340	—	9,340	1.5	10,547	.2
Texas	25,492	18,802	—	—	44,294	2.8	50,584	1.1	17,700	—	17.700	2.8	68,284	1.3
Mont.	—	—	—	—	—	—	1,297	(2)	—	—	—	—	1,297	(2)
Idaho	—	—	—	—	—	—	23,634	.5	—	—	—	—	23,634	.4
Colo.	—	—	—	—	—	—	6,201	.1	—	—	—	—	6,201	.1
N. Mex.	—	—	—	—	—	—	1,649	(2)	11,250	—	11.250	1.8	12,899	.2
Ariz.	19,269	4,020	17,864	4,632	45,785	2.9	59,270	1.2	—	—	—	—	59,270	1.1
Utah	—	—	—	—	—	—	14,300	.3	—	—	—	—	14,300	.3
Wash.	—	—	—	—	—	—	436,377	9.1	—	292	292	.1	436,669	8.1
Ore.	—	—	—	—	—	—	112,281	2.4	—	11,029	11,029	1.7	123,310	2.3
Calif.	249.976	29,064	92,771	8,848	380,659	23.9	2,033,501	42.7	—	458,740	458,740	72.4	2,492,241	46.1
Hawaii	—	—	—	—	—	—	9,192	.2	—	11,287	11.287	1.8	20,479	.4
U.S.[4]	1,198,657	189,692	110,635	93,694	1,592,678	100.0	4,772,355	100.0	151,730	481.348	633,078	100.0	5,405.453	100.0

[1] Avocado 1978/79 crop, bananas, bushberries, dates, figs, nectarines, olives, papayas, and pomegranates. [2] Less than 0.05 percent. [3] Includes Georgia. [4] Some United States totals do not add due to rounding. [5] 1977/78 crop. [6] Tangerines, limes, tangelos, and Temples. [7] Almond, filberts, Macadamia nuts, walnuts, and pistachios.

Sources: Noncitrus Fruit and Nuts Annual, Vegetable Report and Citrus Annual, CRB, ESCS.

Table 16--Fruit and edible tree nuts: Utilized production, by States, United States, 1979[1]

State	Noncitrus fruits												
	Apples	Apricots	Cherries		Cranberries	Grapes	Peaches	Pears	Prunes and plums	Strawberries	Other[2]	Total	
			Sweet	Tart								Quantity	Percent of U.S.
	1,000 tons												Percent
Maine	43.0	---	---	---	---	---	---	---	---	---	8.5	51.5	0.4
N.H.	29.0	---	---	---	---	---	---	---	---	---	---	29.0	.2
Vt.	24.5	---	---	---	---	---	---	---	---	---	---	24.5	.2
Mass.	47.5	---	---	---	54.0	---	1.6	---	---	---	---	103.1	.8
R.I.	2.5	---	---	---	---	---	---	---	---	---	---	2.5	([3])
Conn.	22.5	---	---	---	---	---	2.5	1.8	---	---	---	26.8	.2
N.Y.	470.0	---	4.1	13.6	---	165.0	3.4	17.7	---	4.2	---	678.0	5.2
N.J.	60.0	---	---	---	12.6	---	45.0	---	---	1.2	11.7	130.5	1.0
Pa.	252.5	---	1.0	3.2	---	55.5	45.0	2.8	---	1.6	---	361.6	2.8
Ohio	52.5	---	---	---	---	12.0	2.0	---	---	4.2	---	70.7	.5
Ind.	39.0	---	---	---	---	---	2.0	---	---	---	---	41.0	.3
Ill.	55.0	---	---	---	---	---	7.5	---	---	---	---	62.5	.4
Mich.	340.0	---	24.5	50.0	---	58.5	17.5	14.0	14.0	6.8	18.0	543.3	4.2
Wis.	24.5	---	---	7.3	45.0	---	---	---	---	1.9	---	78.7	.6
Minn.	6.4	---	---	---	---	---	---	---	---	---	---	6.4	.1
Iowa	5.9	---	---	---	---	---	---	---	---	---	---	5.9	.1
Mo.	35.0	---	---	---	---	4.5	6.0	---	---	---	---	45.5	.4
Kans.	7.1	---	---	---	---	---	2.5	---	---	---	---	9.6	.1
Del.	6.5	---	---	---	---	---	.8	---	---	---	---	7.3	.1
Md.	42.5	---	---	---	---	---	10.5	---	---	---	---	53.0	.4
Va.	257.5	---	---	---	---	---	16.0	---	---	---	---	273.5	2.1
W. Va.	130.0	---	---	---	---	---	12.0	---	---	---	---	142.0	1.1
N.C.	171.5	---	---	---	---	5.5	25.0	---	---	2.6	3.9	208.5	1.6
S.C.	16.5	---	---	---	---	[4]5.2	171.5	---	---	---	---	193.2	1.4
Ga.	17.5	---	---	---	---	---	67.5	---	---	---	---	85.0	.6
Fla.	---	---	---	---	---	---	---	---	---	19.2	---	19.2	.2
Ky.	10.2	---	---	---	---	---	7.5	---	---	---	---	17.7	.1
Tenn.	5.0	---	---	---	---	---	4.2	---	---	---	---	9.2	.1
Ala.	---	---	---	---	---	---	7.0	---	---	---	---	7.0	.1
Miss.	---	---	---	---	---	---	1.5	---	---	---	---	1.5	([3])
Ark.	11.0	---	---	---	---	8.2	17.5	---	---	.9	---	37.6	.3
La.	---	---	---	---	---	---	3.5	---	---	2.3	---	5.8	([3])
Okla.	---	---	---	---	---	---	6.0	---	---	---	---	6.0	.1
Texas	---	---	---	---	---	---	17.0	---	---	---	---	17.0	.1
Mont.	---	---	3.0	---	---	---	---	---	---	---	---	3.0	([3])
Idaho	57.5	---	3.0	---	---	---	5.3	---	7.5	---	---	73.3	.6
Colo.	50.0	---	---	.8	---	---	6.5	4.4	---	---	---	61.7	.4
N. Mex.	7.0	---	---	---	---	---	---	---	---	---	---	7.0	.1
Ariz.	---	---	---	---	---	13.5	---	---	---	---	---	13.5	.1
Utah	25.5	2.0	5.6	8.5	---	---	9.0	5.0	---	---	---	55.6	.4
Wash.	1,225.0	2.5	69.0	---	7.4	102.8	15.5	247.3	15.0	8.2	9.2	1,701.9	13.1
Ore.	70.0	---	38.0	1.8	4.7	---	8.0	188.0	26.0	21.3	16.3	374.1	2.9
Calif.	255.0	140.0	34.3	---	---	4,493.0	889.0	365.3	592.6	244.4	301.6	7,315.2	56.4
Hawaii	---	---	---	---	---	---	---	---	---	---	22.2	22.2	.2
U.S.[5]	3,875.1	144.5	182.4	85.2	123.7	4,923.7	1,435.8	846.3	655.1	318.8	391.4	12,982.0	100.0

See footnotes at end of table.

Table 16—Fruit and edible tree nuts: Utilized production, by States, United States, 1979[1] —Continued

State	Citrus Fruit[6]						Total all fruits		Tree nuts				Total of all fruits and tree nuts	
	Oranges	Grape-fruit	Lemons	Other[7]	Total		Quantity	Percent of U.S.	Pecans	Other[8]			Quantity	Percent of U.S.
					Quantity	Percent of U.S.					Quantity	Percent of U.S.		
	1,000 tons					*Percent*	*1,000 tons*	*Percent*	*1,000 tons*			*Percent*	*1,000 tons*	*Percent*
Maine	---	---	---	---	---	---	51.5	0.2	---	---	---	---	51.5	0.2
N.H.	---	---	---	---	---	---	29.0	.1	---	---	---	---	29.0	.1
Vt.	---	---	---	---	---	---	24.5	.1	---	---	---	---	24.5	.1
Mass.	---	---	---	---	---	---	103.1	.4	---	---	---	---	103.1	.4
R.I.	---	---	---	---	---	---	2.5	([3])	---	---	---	---	2.5	([3])
Conn.	---	---	---	---	---	---	26.8	.1	---	---	---	---	26.8	.1
N.Y.	---	---	---	---	---	---	678.0	2.6	---	---	---	---	678.0	2.5
N.J.	---	---	---	---	---	---	130.5	.5	---	---	---	---	130.5	.5
Pa.	---	---	---	---	---	---	361.6	1.4	---	---	---	---	361.6	1.3
Ohio	---	---	---	---	---	---	70.7	.3	---	---	---	---	70.7	.3
Ind.	---	---	---	---	---	---	41.0	.2	---	---	---	---	41.0	.2
Ill.	---	---	---	---	---	---	62.5	.2	---	---	---	---	62.5	.2
Mich.	---	---	---	---	---	---	543.3	2.1	---	---	---	---	543.3	2.0
Wis.	---	---	---	---	---	---	78.7	.3	---	---	---	---	78.7	.3
Minn.	---	---	---	---	---	---	6.4	([3])	---	---	---	---	6.4	([3])
Iowa	---	---	---	---	---	---	5.9	([3])	---	---	---	---	5.9	([3])
Mo.	---	---	---	---	---	---	45.5	.2	---	---	---	---	45.5	.2
Kans.	---	---	---	---	---	---	9.6	([3])	---	---	---	---	9.6	([3])
Del.	---	---	---	---	---	---	7.3	([3])	---	---	---	---	7.3	([3])
Md.	---	---	---	---	---	---	53.0	.2	---	---	---	---	53.0	.2
Va.	---	---	---	---	---	---	273.5	1.0	---	---	---	---	273.5	1.0
W. Va.	---	---	---	---	---	---	142.0	.5	---	---	---	---	142.0	.5
N.C.	---	---	---	---	---	---	208.5	.8	1.0	---	1.0	0.2	209.5	.8
S.C.	---	---	---	---	---	---	193.2	.7	1.3	---	1.3	.2	194.5	.7
Ga.	---	---	---	---	---	---	85.0	.3	32.5	---	32.5	4.9	117.5	.4
Fla.	7,380.0	2,125.0	---	596.0	10,101.0	75.9	10,120.2	38.6	1.3	---	1.3	.2	10,121.5	37.8
Ky.	---	---	---	---	---	---	17.7	.1	---	---	---	---	17.7	.1
Tenn.	---	---	---	---	---	---	9.2	([3])	---	---	---	---	9.2	([3])
Ala.	---	---	---	---	---	---	7.0	([3])	3.5	---	3.5	.5	10.5	([3])
Miss.	---	---	---	---	---	---	1.5	([3])	1.3	---	1.3	.2	2.8	([3])
Ark.	---	---	---	---	---	---	37.6	.1	1.3	---	1.3	.5	38.9	.1
La.	---	---	---	---	---	---	5.8	([3])	12.5	---	12.5	1.9	18.3	.1
Okla.	---	---	---	---	---	---	6.0	([3])	10.0	---	10.0	1.5	16.0	.1
Texas	272.0	360.0	---	---	632.0	4.7	649.0	2.5	40.0	---	40.0	6.1	689.0	2.6
Mont.	---	---	---	---	---	---	3.0	([3])	---	---	---	---	3.0	([3])
Idaho	---	---	---	---	---	---	73.3	.3	---	---	---	---	73.3	.3
Colo.	---	---	---	---	---	---	61.7	.2	---	---	---	---	61.7	.2
N. Mex.	---	---	---	---	---	---	7.0	([3])	6.0	---	6.0	.9	13.0	([3])
Ariz.	109.0	72.0	209.0	17.0	407.0	3.1	420.5	1.6	---	---	---	---	420.5	1.6
Utah	---	---	---	---	---	---	55.6	.2	---	---	---	---	55.6	.2
Wash.	---	---	---	---	---	---	1,701.9	6.5	---	0.3	.3	([3])	1,702.2	6.3
Ore.	---	---	---	---	---	---	374.1	1.4	---	12.2	12.2	1.9	386.3	1.4
Calif.	1,395.0	189.0	528.0	54.0	2,166.0	16.3	9,481.2	36.2	---	521.9	521.9	79.4	10,003.1	37.1
Hawaii	---	---	---	---	---	---	22.2	.1	---	12.5	12.5	1.9	34.7	.1
U.S.	9,156.0	2,746.0	737.0	667.0	13,306.0	100.0	26,288.0	100.0	110.6	546.9	657.5	100.0	26,945.5	100.0

[1] Preliminary. [2] Avocado 1979/80 crop, bananas, bushberries, dates, figs, nectarines, olives, papayas, and pomegranates. [3] Less than 0.05 percent. [4] Includes Georgia. [5] Some United States totals do not add due to rounding. [6] 1978/79 crop. [7] Tangerines, limes, tangelos, and Temples. [8] Almond, filberts, Macadamia nuts, walnuts, and pistachios.

Sources: Noncitrus Fruit and Nuts Annual Vegetable Report and Citrus Annual, CRB, ESCS.

Table 17—Fruit and edible tree nuts: Value of production, by States, United States, 1979[1]

State	Noncitrus fruit												
	Apples	Apricots	Cherries		Cranberries	Grapes	Peaches	Pears	Prunes and plums	Strawberries	Other[2]	Total	
			Sweet	Tart								Value	Percent of U.S.
	1,000 dollars												Percent
Maine	12,900	---	---	---	---	---	---	---	---	---	5,950	18,850	0.6
N.H.	8,758	---	---	---	---	---	---	---	---	---	---	8,758	.3
Vt.	7,644	---	---	---	---	---	---	---	---	---	---	7,644	.2
Mass.	13,870	---	---	---	23,328	---	1,056	---	---	---	---	38,254	1.1
R.I.	790	---	---	---	---	---	---	---	---	---	---	790	(3)
Conn.	6,480	---	---	---	---	---	1,600	810	---	---	---	8,890	.3
N.Y.	93,060	---	1,810	12,613	---	38,610	1,487	3,221	---	4,679	---	155,480	4.6
N.J.	12,360	---	---	---	5,490	---	15,210	---	---	1,000	13,806	47,866	1.4
Pa.	45,955	---	1,066	3,125	---	12,099	13,320	823	---	2,231	---	78,619	2.4
Ohio	17,430	---	---	---	---	2,484	1,040	---	---	3,652	---	24,606	.7
Ind.	9,594	---	---	---	---	---	880	---	---	---	---	10,474	.3
Ill.	12,540	---	---	---	---	---	2,775	---	---	---	---	15,315	.5
Mich.	56,440	---	9,996	48,500	---	13,865	6,790	2,926	2,898	6,619	16,164	164,198	4.9
Wis.	6,468	---	---	6,585	19,170	---	---	---	---	1,824	---	34,047	1.0
Minn.	2,374	---	---	---	---	---	---	---	---	---	---	2,374	.1
Iowa	1,534	---	---	---	---	---	---	---	---	---	---	1,534	(3)
Mo.	9,240	---	---	---	---	1,395	2,580	---	---	---	---	13,215	.4
Kans.	1,495	---	---	---	---	---	1,250	---	---	---	---	2,745	.1
Del.	1,261	---	---	---	---	---	195	---	---	---	---	1,456	(3)
Md.	8,670	---	---	---	---	---	3,003	---	---	---	---	11,673	.4
Va.	43,775	---	---	---	---	---	4,224	---	---	---	---	47,999	1.4
W. Va.	22,880	---	---	---	---	---	4,032	---	---	---	---	26,912	.8
N.C.	27,440	---	---	---	---	1,419	8,150	---	---	2,279	4,859	44,147	1.3
S.C.	5,445	---	---	---	---	[4]1,533	47,677	---	---	---	---	54,655	1.6
Ga.	3,920	---	---	---	---	---	15,255	---	---	---	---	19,175	.6
Fla.	---	---	---	---	---	---	---	---	---	22,157	---	22,157	.7
Ky.	2,639	---	---	---	---	---	3,150	---	---	---	---	5,789	.2
Tenn.	1,560	---	---	---	---	---	1,445	---	---	---	---	3,005	.1
Ala.	---	---	---	---	---	---	2,590	---	---	---	---	2,590	.1
Miss.	---	---	---	---	---	---	600	---	---	---	---	600	(3)
Ark.	2,618	---	---	---	---	1,771	4,830	---	---	770	---	9,989	.3
La.	---	---	---	---	---	---	1,610	---	---	2,047	---	3,657	.1
Okla.	---	---	---	---	---	---	1,824	---	---	---	---	1,824	.1
Texas	---	---	---	---	---	---	6,800	---	---	---	---	6,800	.2
Mont.	---	---	2,012	---	---	---	---	---	---	---	---	2,012	.1
Idaho	18,285	---	1,647	---	---	---	1,575	---	2,430	---	---	23,932	.7
Colo.	9,600	---	---	751	---	---	2,704	920	---	---	---	13,975	.4
N. Mex.	1,694	---	---	---	---	---	---	---	---	---	---	1,694	.1
Ariz.	---	---	---	---	---	12,555	---	---	---	---	---	12,555	.4
Utah	6,120	960	3,354	7,412	---	---	3,060	1,400	---	---	---	22,306	.7
Wash.	289,100	840	41,814	---	3,190	21,074	5,022	50,673	2,895	5,696	11,865	432,169	13.0
Ore.	15,120	---	20,672	1,519	2,051	---	3,072	40,870	4,784	14,370	20,924	123,382	3.7
Calif.	46,410	37,520	27,646	---	---	1,016,261	167,602	72,129	160,300	176,647	86,752	1,791,267	53.8
Hawaii	---	---	---	---	---	---	---	---	---	---	10,967	10,967	.3
U.S.[5]	825,469	39,320	110,017	80,505	53,229	1,123,066	336,408	173,772	173,307	243,971	171,287	3,330,351	100.0

See footnotes at end of table.

Table 17—Fruit and edible tree nuts: Value of production, by States, United States, 1979 [1] —Continued

State	Citrus fruit[6]						Total all fruit		Tree nuts				Total all fruit and tree nuts	
	Oranges	Grapefruit	Lemons	Other[7]	Total		Value	Percent of U.S.	Pecans	Other[8]	Total		Value	Percent of U.S.
					Value	Percent of U.S.					Value	Percent of U.S.		
	1,000 dollars					*Percent*	*1,000 dollars*	*Percent*	*1,000 dollars*			*Percent*	*1,000 dollars*	*Percent*
Maine	---	---	---	---	---	---	18,850	0.4	---	---	---	---	18,850	0.3
N.H.	---	---	---	---	---	---	8,758	.2	---	---	---	---	8,758	.1
Vt.	---	---	---	---	---	---	7,644	.1	---	---	---	---	7,644	.1
Mass.	---	---	---	---	---	---	38,254	.7	---	---	---	---	38,254	.6
R.I.	---	---	---	---	---	---	790	(3)	---	---	---	---	790	(3)
Conn.	---	---	---	---	---	---	8,890	.2	---	---	---	---	8,890	.2
N.Y.	---	---	---	---	---	---	155,480	3.0	---	---	---	---	155,480	2.6
N.J.	---	---	---	---	---	---	47,866	.9	---	---	---	---	47,866	.8
Pa.	---	---	---	---	---	---	78,619	1.5	---	---	---	---	78,619	1.3
Ohio	---	---	---	---	---	---	24,606	.5	---	---	---	---	24,606	.4
Ind.	---	---	---	---	---	---	10,474	.2	---	---	---	---	10,474	.2
Ill.	---	---	---	---	---	---	15,315	.3	---	---	---	---	15,315	.3
Mich.	---	---	---	---	---	---	164,198	3.2	---	---	---	---	164,198	2.7
Wis.	---	---	---	---	---	---	34,047	.7	---	---	---	---	34,047	.6
Minn.	---	---	---	---	---	---	2,374	(3)	---	---	---	---	2,374	(3)
Iowa	---	---	---	---	---	---	1,534	(3)	---	---	---	---	1,534	(3)
Mo.	---	---	---	---	---	---	13,215	.3	---	---	---	---	13,216	.2
Kans.	---	---	---	---	---	---	2,745	.1	---	---	---	---	2,745	.1
Del.	---	---	---	---	---	---	1,456	(3)	---	---	---	---	1,456	(3)
Md.	---	---	---	---	---	---	11,673	.2	---	---	---	---	11,673	.2
Va.	---	---	---	---	---	---	47,999	.9	---	---	---	---	47,999	.8
W. Va.	---	---	---	---	---	---	26,912	.5	---	---	---	---	26,912	.5
N.C.	---	---	---	---	---		44,147	.9	1,240	---	1,240	0.1	45,387	.8
S.C.	---	---	---	---	---	---	54,655	1.1	1,687	---	1,687	.2	56,342	.9
Ga.	---	---	---	---	---	---	19,175	.4	44,250	---	44,250	4.9	63,425	1.1
Fla.	1,041,820	166,568	---	87,689	1,296,077	71.4	1,318,234	25.6	1,635	---	1,635	.2	1,319,869	.1
Ky.	---	---	---	---	---	---	5,789	.1	---	---	---	---	5,789	.1
Tenn.	---	---	---	---	---	---	3,005	.1	---	---	---	---	3,005	.1
Ala.	---	---	---	---	---	---	2,590	.1	4,149	---	4,149	.5	6,739	.1
Miss.	---	---	---	---	---	---	600	(3)	1,965	---	1,965	.2	2,565	(3)
Ark.	---	---	---	---	---	---	9,989	.2	2,017	---	2,017	.2	12,006	.2
La.	---	---	---	---	---	---	3,657	.1	9,950	---	9,950	1.1	13,607	.2
Okla.	---	---	---	---	---	---	1,824	(3)	10,850	---	10,850	1.2	12,674	.2
Texas	26,953	17,640	---	---	44,593	2.5	51,393	1.0	35,750	---	35,750	4.0	87,143	1.4
Mont.	---	---	---	---	---	---	2,012	---	---	---	---	---	2,012	(3)
Idaho	---	---	---	---	---	---	23,937	.5	---	---	---	---	23,937	.4
Colo.	---	---	---	---	---	---	13,975	.3	---	---	---	---	13,975	.2
N. Mex.	---	---	---	---	---	---	1,694	(3)	6,960	---	6,960	.8	8,654	.1
Ariz.	17,406	6,503	22,055	3,483	49,447	2.7	62,002	1.2	---	---	---	---	62,002	1.0
Utah	---	---	---	---			22,306	.4	---	---	---	---	22,306	.4
Wash.	---	---	---	---	---	---	432,169	8.4	---	285	285	(3)	432,454	7.2
Ore.	---	---	---	---	---	---	123,382	2.4	---	11,480	11,480	1.3	134,862	2.2
Calif.	269,444	28,028	112,034	14,877	424,383	23.4	2,215,650	43.1	---	754,148	754,148	83.6	2,969,798	49.2
Hawaii	---	---	---	---	---	---	10,967	.2	---	15,500	15,500	1.7	26,467	.4
U.S.[5]	1,355,623	218,739	134,089	106,049	1,814,500	100.0	5,144,851	100.0	120,453	781,413	901,866	100.0	6,046,717	100.0

[1] Preliminary. [2] Avocado 1979/80 crop, bananas, bushberries, dates, figs, nectarines, olives, papayas, and pomegranates. [3] Less than 0.05 percent. [4] Includes Georgia. [5] Some United States totals do not add due to rounding. [6] 1978/79 crop. [7] Tangerines, limes, tangelos, and Temples. [8] Almond, filberts, Macadamia nuts, walnuts, and pistachios.

Sources: Noncitrus Fruit and Nuts Annual Vegetable Report and Citrus Annual, CR8, ESCS.

Table 18—Fruit and edible tree nuts: Utilized production and value, United States, crop year, 1977, 1978 and 1979[1]

Commodity	Utilized production			Value of production		
	Crop year			Crop year		
	1977	1978	1979	1977	1978	1979
	1,000 tons			*1,000 dollars*		
NONCITRUS:						
Apples, commercial	3,322	3,777	3,875	698,890	783,083	825,469
Apricots, 3 States	141	126	145	29,696	31,410	39,320
Avocados, 2 States[2]	118	146	(4)	86,563	94,233	(4)
Bananas, Hawaii	3	2	2	905	888	970
Bushberries	29	64	68	28,299	80,320	73,568
Cherries, sweet	147	155	182	72,686	107,315	110,017
Cherries, tart	106	91	85	61,949	79,334	80,505
Cranberries	105	123	124	38,154	52,903	53,229
Dates, California	25	25	24	8,585	11,019	11,760
Figs, California	42	30	37	12,243	9,667	15,100
Grapes	4,296	4,318	4,924	834,794	1,005,794	1,123,066
Nectarines, California	155	148	172	31,775	45,436	33,368
Olives, California	43	126	59	17,329	38,178	23,482
Papayas, Hawaii	32	32	20	7,565	8,304	9,997
Peaches[3]	1,484	1,338	1,481	281,740	308,634	336,408
Pears	784	727	846	114,746	159,738	173,772
Persimmons, California	2	(5)	(5)	700	(5)	(5)
Plums, California	157	154	175	49,141	56,980	47,250
Pomegranates, California	10	10	9	1,430	2,214	3,042
Prunes, California	508	411	418	79,341	91,872	113,050
Prunes and plums, other States	58	69	63	9,175	10,797	13,007
Strawberries	325	324	318	214,947	201,558	243,971
Total noncitrus[10]	11,892	12,196	13,027	2,680,243	3,179,677	3,330,351
CITRUS:[6]						
Oranges	10,546	9,546	9,156	811,196	1,198,657	1,355,623
Tangerines	249	228	237	32,104	35,560	41,775
Grapefruit	3,032	3,030	2,746	175,467	189,692	218,739
Lemons	988	991	737	92,500	110,635	134,089
Limes, Florida	40	18	29	11,610	8,791	11,642
Tangelos, Florida[7]	216	221	189	13,296	23,128	22,176
Temples, Florida	171	221	212	12,882	26,215	30,456
Total citrus[10]	15,242	14,255	13,306	1,149,055	1,592,678	1,814,500
TREE NUTS:						
Almonds, California[8]	249	14	308	264,485	253,400	558,700
Filberts, 2 States	12	14	13	8,068	11,321	11,765
Macadamia nuts, Hawaii	10	11	13	8,030	11,287	15,500
Pecans	118	125	111	136,459	151,730	120,453
Pistachios[9]	2	1	8	4,680	3,100	27,348
Walnuts, 2 States	193	160	205	140,707	202,240	168,100
Total tree nuts[10]	584	454	658	562,429	633,078	901,866
Total all fruit and nuts[10]	27,718	26,905	26,991	4,391,727	5,405,433	6,046,717

[1] Preliminary. [2] 1977 indicates 1977/78. [3] Production for clingstone peaches includes cull and cannery diversions but excluded in value. [4] Data available until July 3, 1980. [5] Estimates discontinued after 1977 crop. [6] 1977 indicates 1976/77. [7] Excludes K-early citrus fruit. [8] Production converted to in-shell equivalent tons, using industry shelling ratios. Value on shelled basis. [9] Estimates beginning 1977. [10] Due to rounding, totals are not identical in tables 13, 14, and 16.

Sources: Noncitrus Fruit and Nuts Annual and Citrus Annual, Vegetable Annual, CRB, ESCS.

Table 19—Production and utilization of specified noncitrus fruit, United States, crops of 1975-79

Commodity and crop year	Production		Utilization[1]									
				Processed (fresh equivalent)								
	Total	Utilized[2]	Fresh	Canned	Frozen	Brined	Crushed for			Dried	Other[3]	Total processed[2]
							Wine	Juice	Oil			
	Thousand tons											
Apricots:												
1975	182.6	175.6	10.1	122.8	14.2	---	---	---	---	28.5	---	165.5
1976	154.6	128.4	12.8	76.0	10.1	---	---	---	---	29.3	---	115.6
1977	147.4	141.4	12.1	79.0	10.5	---	---	---	---	39.5	---	129.3
1978	126.3	126.3	9.3	78.0	8.5	---	---	---	---	30.0	---	116.5
1979[7]	144.5	144.5	7.0	83.7	9.8	---	---	---	---	39.5	---	133.0
Bananas:												
1975	3.1	3.1	3.1	---	---	---	---	---	---	---	---	---
1976	2.5	2.5	2.5	---	---	---	---	---	---	---	---	---
1977	2.9	2.9	2.9	---	---	---	---	---	---	---	---	---
1978	2.4	2.4	2.4	---	---	---	---	---	---	---	---	---
1979	2.4	2.4	2.4	---	---	---	---	---	---	---	---	---
Bushberries:												
1975	32.3	31.3	2.0	---	---	---	---	---	---	---	---	29.4
1976	29.0	28.8	2.0	---	---	---	---	---	---	---	---	26.7
1977	29.5	29.1	1.9	---	---	---	---	---	---	---	---	27.3
1978	64.6	64.3	13.5	---	---	---	---	---	---	---	---	50.8
1979												
Cherries, sweet:												
1975	155.9	155.9	77.5	9.2	---	63.9	---	---	---	---	5.2	78.4
1976	172.9	167.7	95.1	11.2	---	51.4	---	---	---	---	10.0	72.6
1977	147.8	146.5	72.4	10.5	---	52.1	---	---	---	---	11.4	74.1
1978	155.1	155.1	67.3	12.8	---	59.7	---	---	---	---	15.3	87.8
1979	182.5	182.4	85.4	14.9	---	74.0	---	---	---	---	8.1	97.0
Cherries, tart:												
1975	145.2	123.0	3.6	40.8	74.6	---	---	---	---	---	4.0	119.4
1976	73.3	73.3	3.0	18.6	49.1	---	---	---	---	---	2.6	70.3
1977	105.5	105.5	3.1	30.1	69.6	---	---	---	---	---	2.7	102.4
1978	90.6	90.6	2.5	23.8	63.2	---	---	---	---	---	1.2	88.1
1979	85.2	85.2	2.2	23.0	58.2	---	---	---	---	---	2.0	83.2
Dates:												
1975	24.8	24.8	24.8	---	---	---	---	---	---	---	---	---
1976	22.4	22.4	22.4	---	---	---	---	---	---	---	---	---
1977	25.4	25.4	25.4	---	---	---	---	---	---	---	---	---
1978	24.6	24.6	24.6	---	---	---	---	---	---	---	---	---
1979	24.5	24.5	24.5	---	---	---	---	---	---	---	---	---

See footnotes at end of table

Table 19—Production and utilization of specified noncitrus fruit, United States, crops of 1975-79—Continued

Commodity and crop year	Production		Utilization[1]									
				Processed (fresh equivalent)								
							Crushed for					
	Total	Utilized[2]	Fresh	Canned	Frozen	Brined	Wine	Juice	Oil	Dried	Other[3]	Total processed[2]
	Thousand tons											
Figs:												
1975	38.0	38.0	[4] 3.2	---	---	---	---	---	---	34.8	---	34.8
1976	32.1	32.1	[4] 1.9	---	---	---	---	---	---	30.2	---	30.2
1977	41.5	41.5	[4] 3.4	---	---	---	---	---	---	38.1	---	38.1
1978	30.4	30.4	[4] 3.7	---	---	---	---	---	---	26.7	---	26.7
1979	37.1	37.1	[4] 3.8	---	---	---	---	---	---	33.3	---	33.3
Grapes:												
1975	4,366.4	4,365.1	498.2	52.7	---	---	2,275.5	266.9	---	1,252.4	19.4	3,866.9
1976	4,398.3	4,093.0	466.3	48.0	---	---	2,321.7	262.8	---	982.5	11.6	3,626.7
1977	4,297.8	4,296.2	481.4	54.0	---	---	2,411.5	207.6	---	1,134.0	7.8	3,814.9
1978	4,566.7	4,317.8	437.3	55.0	---	---	2,671.4	389.8	---	759.0	5.4	3,880.6
1979	4,924.0	4,923.7	503.1	60.0	---	---	2,672.5	306.4	---	1,377.5	4.2	4,420.6
Nectarines:												
1975	111.0	111.0	110.0	---	---	---	---	---	---	---	---	1.0
1976	128.0	128.0	127.5	---	---	---	---	---	---	---	---	.5
1977	155.0	155.0	155.0	---	---	---	---	---	---	---	---	---
1978	148.0	148.0	144.7	---	---	---	---	---	---	---	---	3.3
1979	172.0	172.0	171.0	---	---	---	---	---	---	---	---	1.0
Olives:												
1975	67.0	67.0	.9	53.3	---	---	---	---	3.8	---	9.0	66.1
1976	80.0	80.0	.6	65.5	---	---	---	---	3.7	---	10.2	79.4
1977	43.0	43.0	.6	32.3	---	---	---	---	2.3	---	7.8	42.4
1978	126.0	126.0	.8	99.1	---	---	---	---	7.3	---	18.8	125.2
1979	59.0	59.0	.4	52.3	---	---	---	---	2.9	---	3.4	58.6
Papayas:												
1975	19.9	19.9	17.5	---	---	---	---	---	---	---	---	2.5
1976	25.0	25.0	21.8	---	---	---	---	---	---	---	---	3.2
1977	31.7	31.7	27.0	---	---	---	---	---	---	---	---	4.8
1978	32.0	32.0	27.3	---	---	---	---	---	---	---	---	4.7
1979	19.8	19.8	18.0	---	---	---	---	---	---	---	---	1.8
Peaches:												
1975	1,419.4	1,324.4	551.4	716.0	26.4	---	---	---	---	19.0	11.6	773.0
1976	1,510.0	1,321.2	576.0	663.2	54.9	---	---	---	---	15.0	12.2	745.2
1977	1,491.5	1,426.1	585.3	752.4	54.9	---	---	---	---	21.0	12.6	840.9
1978	1,347.9	1,278.4	588.4	615.4	34.9	---	---	---	---	17.5	22.2	690.0
1979	1,488.8	1,435.8	643.9	713.8	46.8	---	---	---	---	16.5	14.8	791.9
Pears:												
1975	749.3	743.0	328.0	373.8	---	---	---	---	---	6.1	35.0	415.0
1976	840.6	820.6	340.7	[5] 471.4	---	---	---	---	---	8.5	N.A.	479.9
1977	786.6	784.5	303.2	[5] 473.7	---	---	---	---	---	7.6	N.A.	481.3
1978	727.1	727.1	300.9	[5] 420.9	---	---	---	---	---	5.3	N.A.	426.2
1979	846.8	846.3	303.1	[5] 533.1	---	---	---	---	---	10.1	N.A.	543.2

See footnotes at end of table.

Table 19—Production and utilization of specified noncitrus fruit, United States, crops of 1975-79—Continued

Commodity and crop year	Production		Utilization[1]									
				Processed (fresh equivalent)								
							Crushed for					
	Total	Utilized[2]	Fresh	Canned	Frozen	Brined	Wine	Juice	Oil	Dried	Other[3]	Total processed[2]
	Thousand tons											
California, plums:												
1975	124.0	124.0	121.4	---	---	---	---	---	---	---	---	2.6
1976	115.0	115.0	111.9	---	---	---	---	---	---	---	---	3.1
1977	157.0	157.0	156.0	---	---	---	---	---	---	---	---	1.0
1978	154.0	154.0	151.0	---	---	---	---	---	---	---	---	3.0
1979	175.0	175.0	173.0	---	---	---	---	---	---	---	---	2.0
California, prunes:												
1975	455.9	455.9	---	---	---	---	---	---	---	455.9	---	455.9
1976	473.6	473.6	---	---	---	---	---	---	---	473.6	---	473.6
1977	508.8	508.8	---	---	---	---	---	---	---	508.8	---	508.8
1978	410.5	410.5	---	---	---	---	---	---	---	410.5	---	410.5
1979	417.6	417.6	---	---	---	---	---	---	---	417.6	---	417.6
Other prunes and plums:[6]												
1975	75.6	71.6	34.6	23.5	2.6	---	---	---	---	11.0	---	37.0
1976	77.0	73.5	38.2	20.9	1.6	---	---	---	---	12.8	---	35.4
1977	61.0	58.0	30.7	14.2	1.3	---	---	---	---	11.8	---	27.3
1978	69.8	69.2	41.0	16.1	3.1	---	---	---	---	9.1	---	28.3
1979	62.5	62.5	36.8	11.9	1.9	---	---	---	---	11.9	---	25.7
Strawberries:												
1975	271.6	271.6	185.0	---	---	---	---	---	---	---	---	86.6
1976	285.6	285.6	180.0	---	---	---	---	---	---	---	---	105.6
1977	325.4	325.4	209.4	---	---	---	---	---	---	---	---	116.0
1978	324.9	324.9	234.2	---	---	---	---	---	---	---	---	90.6
1979	318.8	318.8	217.7	---	---	---	---	---	---	---	---	101.2

[1] For all items except bananas and California-apricots, dates, persimmons, plums, and prunes, some quantities canned, frozen, or otherwise processed are included in other utilization categories to avoid disclosure of individual operations. [2] Some totals do not add due to rounding. [3] Tart cherries, juice, wine, and brined; sweet cherries, frozen, juice, etc., and olives, chopped, minced, brined and other cures. [4] Includes canned figs. [5] Mostly canned, inlcudes small quantities dried other uses not published by States to avoid disclosure of individual operations. [6] Michigan, Idaho, Oregon, and Washington. [7] Utilization is California only.

Sources: Noncitrus Fruit and Nut Annual and Vegetable Report, CRB, ESCS.

Table 20—Fruit and edible tree nuts: Season average prices per unit received by growers, 1978 and 1979

Commodity	Unit	1978			1979[1]		
		Fresh	Processed	All	Fresh	Processed	All
		Dollars					
NONCITRUS:[2]							
Apples, commercial	Lb.	0.139	[3]117.00	0.104	([4])	([4])	0.107
Apricots, 3 States	Ton	498.00	228.00	249.00	[6]1,349.00	[6]1,259.00	272.00
Avocados:[5]	Ton	645.00	---	645.00	([4])	([4])	([4])
California[5]	Ton	691.00	---	691.00	([4])	([4])	([4])
Bananas, Hawaii	Lb.	.185	---	.185	.205	---	.205
Blackberries	Lb.	.552	.506	.507	.656	.578	.581
Blueberries	Lb.	.705	.591	.627	.626	.401	.488
Boysenberries[7]	Lb.	.800	.815	.814	.800	.792	.792
Currants	Lb.	.379	.300	.301	.378	.424	.423
Loganberries	Lb.	.450	.413	.414	.600	.609	.609
Black raspberries	Lb.	.750	.750	.750	.898	.852	.853
Red raspberries	Lb.	.679	.725	.722	.713	.678	.682
Cherries, sweet	Ton	858.00	558.00	692.00	708.00	511.00	603.00
Cherries, tart	Lb.	.386	.439	.438	.394	.475	.472
Cranberries	Bbl.	---	---	21.50	---	---	([4])
Dates, California	Ton	447.00	---	447.00	480.00	---	480.00
Figs, California	Ton	352.00	309.00	318.00	416.00	396.00	407.00
Grapes	Ton	496.00	203.00	233.00	417.00	207.00	228.00
California	Ton	483.00	201.00	232.00	401.00	206.00	226.00
Nectarines, California	Ton	313.00	44.10	307.00	195.00	69.00	194.00
Olives, California	Ton	245.00	303.00	303.00	300.00	398.00	398.00
Papayas, Hawaii	Lb.	.144	.046	.130	.274	.038	.252
Peaches	Lb.	.171	[3]155.00	.121	.155	[3]173.00	.117
Pears	Ton	267.00	[8]185.00	220.00	272.00	[8]169.00	205.00
Plums, California	Ton	377.00	29.30	370.00	273.00	42.90	270.00
Pomegranates, California	Ton	---	---	233.00	---	---	338.00
Prunes, California	Ton	---	696.00	696.00	---	850.00	850.00
Prunes and plums, other States	Ton	188.00	110.00	156.00	258.00	137.00	208.00
Strawberries	Lb.	.357	.188	.310	.428	.285	.383
CITRUS:[9]							
Oranges	Box	7.20	5.00	5.45	8.75	5.90	6.44
Tangerines	Box	9.35	1.16	6.84	11.08	1.16	7.74
Grapefruit	Box	3.45	1.92	2.54	4.55	2.33	3.26
Lemons	Box	8.10	.86	4.24	10.61	1.00	6.91
Limes	Box	24.95	2.55	19.11	23.00	2.40	16.17
Tangelos	Box	5.20	4.40	4.72	6.40	4.50	5.28
Temples	Box	6.40	4.60	5.35	7.30	5.80	6.48
TREE NUTS:							
Almond, California	Lb.	---	---	1.40	---	---	1.51
Filberts, 2 States	Ton	---	---	806.00	---	---	941.00
Macadamia nuts, Hawaii	Lb.	---	---	.538	---	---	.620
Pistachios	Lb.	---	---	1.24	---	---	1.59
Pecans, all	Lb.	---	---	.605	---	---	.545
Improved	Lb.	---	---	.645	---	---	.717
Native and seeding	Lb.	---	---	.529	---	---	.414
Walnuts, 2 States	Ton	---	---	1,264.00	---	---	820.00

[1] Preliminary. [2] Fresh fruit prices are equivalent returns at packinghouse door for Washington and Oregon, first delivery point for California, and at point of first sale in all other States. Processing fruit prices for all States are equivalent returns at processing plant door. [3] Dollars per ton. [4] Data available July 3, 1980. [5] 1978 indicates 1978/79. [6] California only. [7] Includes youngberries. [8] Excludes dried pears. [9] Equivalent packinghouse door-1978 indicates 1977/78.

Source: Noncitrus Fruit and Nuts Annual, Agricultural Prices and Vegetables Report, CRB, ESCS.

Table 21—Fruit for processing: Season average price per ton received by growers for selected noncitrus fruit, by type of use, principal States, 1975-79[1]

Fruit, use and States	1975	1976	1977	1978	1979
			Dollars		
Apricots:					
Canning:					
Washington	39.40	(2)	(2)	(2)	(2)
California	166.00	140.00	162.00	229.00	261.00
Freezing:					
California	167.00	127.00	161.00	226.00	244.00
Drying:					
California (fresh basis)	381.00	345.00	283.00	234.00	275.00
Cherries, tart:					
Processing, all:					
New York	206.00	490.00	590.00	858.00	924.00
Pennsylvania	210.00	516.00	600.00	852.00	1,016.00
Michigan	200.00	506.00	590.00	890.00	972.00
Wisconsin	208.00	518.00	578.00	912.00	906.00
Cherries, sweet:					
Processing, all:					
New York	229.00	267.00	394.00	461.00	398.00
Michigan	224.00	358.00	405.00	456.00	396.00
Canning:					
Washington	395.00	383.00	416.00	753.00	572.00
Oregon	409.00	390.00	492.00	791.00	700.00
California	(2)	(2)	(2)	(2)	(2)
Michigan	238.00	400.00	420.00	466.00	392.00
Brining:					
Washington	261.00	267.00	408.00	659.00	466.00
Oregon	345.00	336.00	393.00	590.00	510.00
California	375.00	293.00	394.00	(2)	729.00
Michigan	222.00	340.00	400.00	444.00	398.00
Figs—California:					
All processing	195.00	178.00	289.00	309.00	396.00
Grapes—California:[3]					
All processing	110.00	124.00	159.00	201.00	206.00
Grapes—					
California (Cont'd.):					
Dried (fresh basis)	151.00	157.00	184.00	243.00	242.00
Wine	85.60	112.00	146.00	188.00	185.00
Peaches, clingstone:					
Canning:					
California	151.00	137.00	141.00	163.00	179.00
Peaches, freestone:					
Canning:					
Pennsylvania	(2)	(2)	(2)	(2)	178.00
Virginia	88.00	116.00	(2)	(2)	(2)
Georgia	(2)	(2)	(2)	(2)	(2)
Washington	(2)	(2)	(2)	(2)	(2)
California	120.00	119.00	132.00	137.00	158.00
Freezing:					
California	111.00	111.00	114.00	(2)	(2)
Drying:					
California (fresh basis)	185.00	232.00	199.00	185.00	136.00
Pears, Bartett:					
Canning:					
Washington	128.00	108.00	112.00	178.00	169.00
Oregon	(2)	(2)	(2)	(2)	(2)
California	149.00	131.00	144.00	216.00	201.00
Drying:					
California (fresh basis)	(2)	180.00	187.00	323.00	141.00
Prunes and plums:					
Canning:					
Michigan	86.00	(2)	95.00	94.00	127.00
Oregon	(2)	81.00	88.00	(2)	(2)
Prunes:					
Drying (fresh basis):					
California	131.00	129.00	156.00	218.00	271.00

[1] Prices are basis bulk fruit at first delivery point for all California fruits except prunes and pears for drying and processed grapes. Prices for California prunes and pears for drying and grapes and for fruits in other States are equivalent processing plant door returns. [2] Not published to avoid disclosing individual operations. [3] All grape varieties used for processing and wine, raisin varieties for dried (fresh basis).

Source: Noncitrus Fruits and Nuts Annual, CRB, ESCS.

Table 22—Fresh fruit: Consumer prices indexes, United States by months, 1976-80[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents											
Apples (pound):												
1976	132.4	137.2	141.5	149.9	157.9	160.7	166.3	178.6	166.0	151.9	158.1	166.6
1977	168.0	173.1	177.8	186.3	193.0	205.2	218.2	211.0	181.2	161.3	164.0	176.5
1978[1]	180.9	191.3	203.0	217.7	233.7	269.9						
1978[2]	185.1	190.0	204.7	217.8	241.6	284.5	300.3	305.9	246.4	195.3	197.4	200.7
1979	205.8	212.9	219.1	223.1	229.9	232.9	250.2	275.2	244.7	212.7	207.2	221.8
1980	230.4											
Bananas (pound):												
1976	145.8	151.6	151.6	154.3	155.4	154.8	154.2	153.1	150.1	150.8	148.8	145.1
1977	147.6	154.6	176.5	176.2	176.2	174.8	159.3	161.8	155.7	163.5	167.8	160.2
1978[1]	159.8	172.2	196.5	196.1	205.8	178.6						
1978[2]	162.8	177.3	203.4	209.1	208.5	178.0	179.5	178.5	168.2	181.4	175.4	184.8
1979	179.2	188.4	194.7	217.9	212.6	225.3	221.0	202.3	210.3	206.6	209.0	225.2
1980	221.9											
Oranges (dozen):												
1976	149.9	143.1	143.8	142.8	141.9	147.8	154.5	162.8	163.1	169.2	168.4	155.7
1977	148.5	158.4	162.1	161.0	164.3	171.2	172.5	176.4	184.7	198.6	208.6	198.9
1978[1]	189.3	198.0	202.4	202.3	204.4	213.5						
1978[2]	201.3	199.6	203.2	199.9	211.2	230.2	235.0	263.5	297.1	312.9	274.5	233.5
1979	250.4	254.3	261.4	267.7	267.1	311.5	313.5	316.2	312.3	306.7	293.7	256.7
1980	236.2											

[1] From 1976-June 1978, these indexes were entitled Urban Wage Earners and Clerical Workers, BLS discontinued these indexes as of June 1978. [2] Starting with Jan. 1978 new index entitled All Urban Consumers, replaced previous index.

Source: Bureau of Labor Statistics.

Table 23—Selected wholesale canned fruit and fruit juice prices, United States, by months, 1976-80

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dollars per dozen											
CANNED FRUIT:												
Applesauce (No. 303 can):												
1975	3.285	3.285	3.221	3.178	3.200	3.117	2.978	2.988	2.988	2.957	2.842	2.810
1976	2.795	2.776	2.797	2.872	3.006	3.006	3.046	3.067	3.122	3.239	3.280	3.280
1977	3.280	3.229	3.229	3.242	3.242	3.254	3.254	3.254	3.344	3.424	3.384	3.406
1978	3.407	3.407	3.424	3.470	3.503	3.503	3.503	3.503	3.535	3.544	3.579	3.579
1979	3.579	3.591	3.591	3.640	3.640	3.656	3.697	3.730	3.858	3.903	3.903	3.903
1980	3.903											
Fruit cocktail (No. 2½ can):												
1975	5.753	5.753	5.851	5.851	5.851	5.851	5.753	5.851	5.851	5.779	5.861	5.763
1976	5.763	5.763	5.763	5.836	5.836	5.944	5.972	5.972	6.042	5.947	5.972	5.972
1977	5.972	5.972	5.972	6.009	6.155	6.275	6.275	6.275	6.205	6.205	6.205	6.205
1978	6.205	6.205	6.275	6.324	6.349	6.441	6.622	6.884	6.925	7.159	7.216	7.383
1979	7.383	7.387	7.387	7.424	7.424	7.507	7.571	7.571	7.641	7.641	7.641	7.571
1980	7.788											
Peaches (No. 2½ can):												
1975	5.048	5.048	5.131	5.131	5.131	5.131	5.131	5.060	5.060	5.149	5.103	5.078
1976	5.078	5.055	5.104	5.055	5.055	5.252	5.259	5.259	5.330	5.259	5.259	5.259
1977	5.259	5.259	5.308	5.346	5.444	5.563	5.444	5.259	5.259	5.235	5.406	5.406
1978	5.431	5.431	5.431	5.479	5.503	5.693	5.885	7.099	6.130	6.274	6.274	6.451
1979	6.451	6.451	6.451	6.451	6.451	6.539	6.620	6.620	6.661	6.661	6.661	6.591
1980	6.661											
Pears (No. 2½ can):												
1975	6.316	6.200	6.112	6.112	6.112	6.112	5.867	5.785	5.745	5.740	5.719	5.699
1976	5.665	5.444	5.444	5.461	5.461	5.519	5.626	5.626	5.626	5.666	5.625	5.585
1977	5.585	5.585	5.564	5.626	5.708	5.769	5.769	5.769	5.790	5.851	5.973	6.014
1978	6.137	6.137	5.431	6.282	6.239	6.462	6.808	7.099	7.177	7.372	7.474	7.492
1979	7.512	7.512	7.512	7.512	7.512	7.622	7.653	7.653	7.653	7.712	7.712	7.712
1980	7.712											
CANNED JUICE:												
Apple (32-oz. bottle):												
1975	4.841	4.841	4.841	4.727	4.727	4.727	4.727	4.727	4.727	4.504	4.134	4.098
1976	4.098	4.134	4.268	4.365	4.527	4.588	4.691	4.691	4.691	4.979	5.074	5.074
1977	5.123	5.273	5.334	5.359	5.430	5.526	5.526	5.526	5.611	5,631	5.631	5.717
1978	5.717	5.802	5.917	5.977	6.100	6.148	6.197	6.245	6.367	6.251	6.450	6.450
1979	6.450	6.450	6.582	6.874	6.972	6.972	6.972	6.972	7.134	7.281	7.281	7.232
1980	7.232											
Orange (No. 3 can):												
1975	4.971	4.799	4.873	4.934	5.081	5.081	5.081	5.154	5.228	5.252	5.387	5.387
1976	5.387	5.387	5.387	5.387	5.497	5.534	5.534	5.534	5.534	5.543	5.534	5.534
1977	5.142	5.889	5.913	5.913	5.913	5.999	5.999	6.219	6.440	6.440	7.052	7.174
1978	7.272	7.529	7.529	7.529	7.529	7.529	7.713	7.713	7.889	7.889	8.550	8.766
1979	8.705	8.705	8.705	8.705	8.705	8.680	8.705	8.705	8.705	8.705	8.705	8.705
1980	8.705											
Grapefruit (No. 3 can):												
1975	4.663	4.663	4.873	4.476	4.457	4.267	4.408	4.653	4.653	4.672	4.672	4.672
1976	4.531	4.633	4.467	4.270	4.299	4.495	4.544	4.554	4.643	4.643	4.643	4.643
1977	4.643	5.182	5.182	5,378	5.427	5.427	5.515	5.515	5.427	6.440	5.427	5.427
1978	5.427	5.427	5.427	5.333	5.427	5.446	5.446	5.446	5.446	5.446	5.760	5.956
1979	6.102	6.200	6.200	6.200	6.200	—	6.200	6.338	6.906	7.151	7.444	7.542
1980	7.600											

Source: Bureau of Labor Statistics, U.S. Department of Labor.

Table 24- Frozen concentrated citrus juices: Florida stocks, packs, supplies, and movements, current season with comparison

Item and season	Carryin	Pack	Imports	Total supply	Total season movements	Carryout
	Million gallons					
Grapefruit:						
1974/75	4.9	7.8	---	12.7	8.5	4.2
1975/76	4.2	9.5	---	13.7	10.5	3.3
1976/77	3.3	12.4	---	15.7	11.9	3.8
1977/78	3.8	14.0	---	17.8	13.7	4.2
1978/79	4.2	14.4	---	18.6	16.3	2.3
1979/80	2.3					
Tangerine:						
1974/75	.4	1.1	---	1.5	1.1	.4
1975/76	.4	1.1	---	1.5	1.1	.4
1976/77	.4	.9	---	1.3	1.1	.2
1977/78	.2	1.7	---	1.9	1.5	.4
1978/79	.4	1.4	---	1.8	1.2	.6
1979/80	.6					

Compiled from Florida Canners Association reports.

Table 25—Selected fresh citrus fruit prices, f.o.b. packed fresh, by months, 1976-80

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dollars per box											
ORANGES:												
Florida:												
1976	5.60	5.50	5.95	5.60	5.70	6.10	6.25	---	---	---	6.00	5.60
1977	5.00	7.50	7.50	7.25	7.80	8.60	---	---	---	---	9.75	8.80
1978	8.40	8.90	9.60	9.50	9.50	9.80	10.00	---	---	---	10.10	9.80
1979	9.90	10.10	10.50	10.00	10.20	10.50	---	---	---	---	8.90	10.60
1980	8.20	8.20										
Texas:												
1976	5.11	5.18	5.10	5.30	---	---	---	---	---	7.22	6.20	6.83
1977	5.09	7.08	6.69	6.48	6.84	6.97	---	---	---	9.00	8.95	8.26
1978	8.11	9.37	9.43	9.11	9.50	9.56	---	---	---	---	11.50	9.85
1979	9.71	9.67	10.51	---	---	---	---	---	---	---	11.28	10.84
1980	9.32	9.83										
Arizona:												
1976	7.70	6.00	5.40	5.20	5.40	5.60	5.65	6.00	---	---	11.00	8.80
1977	6.80	7.35	5.76	5.20	6.50	7.50	7.20	7.65	---	---	13.90	10.80
1978	10.40	9.92	10.09	9.00	9.90	9.64	8.84	---	---	22.80	16.70	13.20
1979	11.10	12.38	11.36	12.30	13.00	10.90	8.72	---	---	---	15.50	10.60
1980	8.15	8.60										
California:												
1976	7.60	6.70	6.35	6.23	6.18	6.57	6.91	7.00	7.60	7.76	9.96	8.47
1977	7.00	7.50	7.28	7.38	7.11	7.88	7.70	8.78	9.10	9.70	12.70	11.30
1978	11.90	11.20	10.54	9.37	9.97	10.10	10.70	13.40	14.50	14.30	14.47	15.10
1979	14.60	14.59	14.27	14.04	14.01	15.99	13.50	13.50	12.40	12.80	14.37	11.06
1980	9.20	9.46										
GRAPEFRUIT:												
Florida:												
1976	5.60	5.45	5.53	5.66	6.36	---	---	---	---	6.30	5.75	5.88
1977	5.53	6.87	6.43	6.30	6.88	7.04	---	---	---	7.22	6.24	6.35
1978	6.07	6.05	5.72	5.69	6.17	7.02	---	---	---	8.51	6.56	6.22
1979	6.55	6.91	7.34	7.97	8.71	---	---	---	---	9.41	---	8.49
1980	7.84	7.79										
Texas:												
1976	5.30	5.00	5.10	5.65	---	---	---	---	---	11.82	7.00	6.94
1977	5.30	6.80	6.14	6.22	5.82	6.12	---	---	---	13.40	8.20	7.66
1978	5.88	5.80	5.04	4.82	5.46	5.50	---	---	---	---	7.30	7.03
1979	6.52	7.35	7.33	7.78	---	---	---	---	---	---	10.12	9.16
1980	8.06	7.56										
LEMONS:												
Arizona:												
1976	11.40	9.20	10.75	---	---	---	---	---	---	11.10	9.60	9.70
1977	10.30	9.70	9.45	12.10	---	---	---	---	15.20	13.00	10.70	10.30
1978	9.62	9.98	9.84	11.00	---	---	---	---	---	---	11.60	11.70
1979	12.20	12.90	12.20	12.50	14.50	12.60	---	---	25.20	25.70	20.55	17.50
1980	14.15	11.80										
California:												
1976	11.40	11.35	12.25	10.70	9.80	10.00	10.40	10.60	9.75	10.70	10.30	9.70
1977	10.20	10.20	9.18	9.40	9.74	10.30	10.30	12.20	13.50	12.90	10.80	10.40
1978	10.00	10.70	9.54	10.50	12.10	16.00	21.20	21.20	16.70	16.60	11.90	11.80
1979	12.50	12.40	13.50	14.40	16.80	18.80	28.50	36.92	25.90	23.10	17.80	16.20
1980	12.40	13.70										

Source: Agricultural Prices, CRB, ESCS.

Table 26—Citrus fruit: United States exports of selected fresh items, by areas of destination, 1974/75-1979/80[1]

Item and season	Canada	United Kingdom	Europe		Total	Other	Total
			EC[2]	Other			
	1,000 metric tons						
Fresh fruit:							
Oranges:							
1974/75	169	18	102	32	152	158	479
1975/76	177	22	77	15	114	149	440
1976/77	170	16	54	7	77	151	398
1977/78	150	4	32	3	39	146	335
1978/79	129	—	23	1	24	129	300
1978/79 thru Dec.	26	---	---	—	---	16	42
1979/80 thru Dec.	25	---	---	---	—	14	39
Grapefruit:							
1974/75	54	4	34	1	39	135	228
1975/76	63	5	69	2	76	146	285
1976/77	57	2	61	5	68	149	274
1977/78	60	3	77	2	82	123	265
1978/79	48	3	69	2	75	155	278
1978/79 thru Dec.	15	2	14	---	16	29	60
1979/80 thru Dec.	16	1	20	---	21	17	54
Lemons:							
1974/75	18	3	65	21	89	99	206
1975/76	16	4	43	26	73	101	190
1976/77	16	6	50	44	100	125	241
1977/78	16	3	32	31	66	124	206
1978/79	13	4	29	35	68	130	211
1978/79 thru Dec.	6	2	15	20	37	60	103
1979/80 thru Dec.	6	---	5	7	12	43	61

[1] Season beginning August 1 for fresh lemons, September 1 for fresh grapefruit and November 1 for fresh oranges. [2] Belguim-Luxembourg, Denmark, West Germany, France, Italy, Netherlands and Ireland.

Source: Foreign Agricultural Serivce.

Table 27—Apples, commercial crop[1]: Production, and season average prices received by growers, 1977, 1978, and indicated 1979 production

State and area	Production			Price per pound		
	1977	1978	1979	1977	1978	1979
	Million pounds			*Cents*		
Eastern States:						
Maine	92.0	75.0	86.0	11.9	13.2	15.0
New Hampshire	58.0	60.0	58.0	12.6	13.4	15.1
Vermont	47.0	49.0	49.0	12.5	12.8	15.6
Massachusetts	95.0	105.0	95.0	12.8	13.8	14.6
Rhode Island	5.5	6.0	5.0	13.1	14.1	15.8
Connecticut	46.0	50.0	45.0	13.5	13.6	14.4
New York	900.0	1,080.0	940.0	8.6	8.5	9.9
New Jersey	130.0	90.0	120.0	9.6	11.3	10.3
Pennsylvania	460.0	400.0	505.0	9.1	8.9	9.1
Delaware	13.5	14.5	13.0	10.4	9.3	9.7
Maryland	70.0	85.0	85.0	12.2	10.4	10.2
Virginia	290.0	515.0	515.0	8.4	8.0	8.5
West Virginia	195.0	295.0	260.0	9.8	8.6	8.8
North Carolina	270.0	324.0	350.0	8.7	7.9	8.0
South Carolina	25.0	22.0	35.0	8.8	11.7	16.5
Georgia	22.0	22.0	35.0	9.2	11.5	11.2
Total	2,719.0	3,192.5	3,196.0			
Central States:						
Ohio	65.0	140.0	105.0	15.5	14.5	16.6
Indiana	52.0	64.0	78.0	10.6	13.6	12.3
Illinois	108.0	89.0	110.0	9.9	12.8	11.4
Michigan	570.0	920.0	680.0	7.9	7.6	8.3
Wisconsin	56.0	66.0	54.0	12.5	12.1	13.2
Minnesota	19.9	28.0	12.9	16.4	15.1	18.4
Iowa	10.7	8.9	11.8	12.5	13.8	13.0
Missouri	58.0	40.0	70.0	12.0	15.3	13.2
Kansas	16.0	10.0	15.0	8.8	11.1	10.6
Kentucky	22.0	15.0	21.0	10.7	12.6	13.0
Tennessee	10.0	8.0	10.0	10.6	14.2	15.6
Arkansas	24.0	13.0	23.0	8.8	10.9	11.9
Total	1,011.6	1,401.9	1,190.7			
Western States:						
Idaho	85.0	130.0	115.0	14.9	14.7	15.9
Colorado	75.0	41.0	100.0	9.3	10.6	9.6
New Mexico	25.0	17.0	14.0	11.5	9.7	12.1
Utah	47.0	35.0	51.0	10.6	11.0	12.0
Washington	2,083.0	2,148.0	2,450.0	13.0	12.6	11.8
Oregon	147.0	142.0	140.0	9.2	11.1	10.8
California	480.0	500.0	510.0	7.8	9.2	9.1
Total	2,942.0	3,013.0	3,380.0			
United States	6,672.6	7,607.4	7,766.7	10.5	10.4	10.7

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[1] In orchards of 100 or more bearing trees. [2] Includes unharvested production and exceeds cullage (million pounds): United States 1977-29.6; 1978-53.2.

Table 28—Apples, commercial crop[1]: Production by varieties, United States, 1977, 1978, and 1979

Variety	1977	1978	1979
	Million pounds		
Cortland	143.9	159.1	137.2
Delicious	2,292.2	2,652.5	2,827.5
Golden Delicious	1,195.8	1,238.9	1,378.5
Gravenstein	90.0	65.0	92.0
Jonathan	356.7	401.8	417.5
McIntosh	687.2	765.0	654.9
Northern Spy	104.8	109.6	120.8
R. I. Greening	121.0	173.0	128.0
Rome Beauty	463.7	568.5	563.7
Stayman	198.8	227.9	239.8
Winesap	148.4	161.7	138.1
Yellow Newtown	152.0	165.0	177.0
York Imperial	260.3	349.5	358.6
Other	457.8	569.9	533.1
Total[1]	6,672.6	7,607.4	7,766.7

[1] Commerical crops refer to the total production of apples in orchards of 100 or more bearing trees. Data include quantities of mature fruit not harvested and excess cullage of harvested fruit not included in data in table 27.

Source: Noncitrus Fruits and Nuts Annual, CRB, ESCS.

Table 29—Canned noncitrus fruit: Canners' stocks, packs, supplies, and shipments, current season, with comparisons

Item and season[1]	Carryin	Pack	Total supply	Shipments to Jan. 1	Jan. 1 stocks	Total season shipments	Carryout
	1,000 equivalent cases 24 No. 2½'s						
Total—11 items:							
1975/76	13,760	61,493	75,253	34,009	41,243	57,812	17,441
1976/77	17,441	55,686	73,127	34,245	38,882	58,297	14,830
1977/78	14,830	58,358	73,188	36,092	37,096	59,661	13,527
1978/79	13,527	48,529	60,056	[4]32,341	[4]29.717	53,055	9,001
1979/80	9,001	58,357	[5]65,613	[4]30,099	[4]37,231		
Apricots:[2]							
1975/76	236	4,421	4,657	1,905	2,752	3,123	1,534
1976/77	1,534	2,387	3,921	1,877	2,044	3,051	870
1977/78	870	2,269	3,139	1,726	1,413	2,687	452
1978/79	452	2,127	2,579	[3]1,473	[3]1,106	2,312	267
1979/80	267	2,887	3,154	[3]1,403	[3]1,751		
Cherries, RSP:							
1975/76	58	1,273	1,331	994	337	1,283	48
1976/77	48	438	486	368	118	477	9
1977/78	9	605	614	508	106	605	9
1978/79	9	582	591	467	124	575	15
1979/80	15	526	541	226	315		
Cherries, sweet:							
1975/76	290	412	702	262	440	487	215
1976/77	215	464	679	306	373	551	128
1977/78	128	501	629	290	338	497	131
1978/79	131	485	616	319	298	504	112
1979/80	112	651	763	295	468		
Fruit cocktail:[2]							
1975/76	3,065	13,677	16,742	7,800	8,942	13,502	3,240
1976/77	3,240	13,605	16,845	7,673	9,172	13,573	3,272
1977/78	3,272	12,979	16,251	7,951	8,300	13,652	2,600
1978/79	2,600	11,704	14,304	[3]7,538	[3]6,76	12,616	1,688
1979/80	1,688	13,954	15,642	[3]7,097	[3]8,546		
Fruits for salad and mixed:[2]							
1975/76	564	1,291	1,855	830	1,025	1,337	518
1976/77	518	1,249	1,767	1,035	732	1,410	357
1977/78	357	2,160	2,516	1,429	1,087	2,132	384
1978/79	384	2,153	2,537	[3]1,226	[3]1.311	2,145	392
1979/80	392	2,842	3,234	[3]979	[2]2,254		
Peaches, spiced clings:[2]							
1975/76	85	212	297	166	131	208	89
1976/77	89	172	261	151	110	202	59
1977/78	59	197	256	143	113	171	85
1978/79	85	117	202	[3]116	[3]86	151	51
1979/80	51	171	222	[3]102	[3]120		
Peaches, clingstone:[2]							
1975/76	4,361	25,691	30,052	14,196	15,856	23,794	6,258
1976/77	6,258	22,783	29,041	13,951	15,090	23,760	5,281
1977/78	5,281	27,568	32,849	16,241	16,608	26,703	6,146
1978/79	6,146	19,874	26,020	[3]14,252	[3]11,769	22,691	3,330
1979/80	3,330	24,554	27,884	[3]13,428	[3]14,456		
Peaches, U.S. freestone:[2]							
1975/76	1,014	3,293	4,307	1,502	2,805	2,929	1,378
1976/77	1,378	2,028	3,406	1,728	1,678	2,650	756
1977/78	756	1,649	2,405	1,000	1,405	1,780	625
1978/79	625	1,538	2,163	[3]1,150	[3]1.013	1,911	252
1979/80[2]	252	1,493	N.A.	[3]663	[3]1,053		
Pears:							
1975/76	3,714	9,776	13,490	5,784	7,706	10,129	3,361
1976/77	3,361	11,518	14,879	6,377	8,502	11,375	3,504
1977/78	3,504	9,614	13,118	6,212	6,906	10,434	2,684
1978/79	2,684	9,026	11,710	[3]5,125	[3]6,585	9,094	2,616
1979/80	2,616	10,568	13,184	[3]5,357	[3]7,827		
Purple plums, U.S.:							
1975/76	373	1,447	1,820	570	1,250	1,020	800
1976/77	800	1,042	1,842	779	1,063	1,248	594
1977/78	594	817	1,411	591	820	1,000	411
1978/79	411	923	1,334	675	659	1,056	278
1979/80	278	711	989	549	441		

[1] Season beginning July 1 for RSP cherries and June 1 for all other items. [2] California only. [3] 1978/79-1979/80 stocks and shipments are Dec. 1 figures. [4] 1978/79-1979/80 crop year includes Dec. 1 and Jan. 1 figures - due to change in reporting schedule. [5] Excludes peaches, Freestone.

Source: National Food Processors Association and Canners League of California.

Table 30—Canned pineapple and juice: Canners' carryin, pack, supplies, shipments, and stocks, current season with comparisons

Item and season[1]	Carryin	Pack		Supply		Shipments		Nov. 1 stocks[2]
		To Nov. 1	Total season	To Nov. 1	Total season	To Nov. 1	Total season	
	1,000 equivalent cases, 24 No. 2½'s							
Canned pineapple:								
1974/75	5,189	8,546	13,913	13,735	19,102	7,248	14,297	6,487
1975/76[2]	[2] 4,174	N.A.	14,852	N.A.	19,026	N.A.	13,589	N.A.
1976/77	5,437	9,818	17,270	15,255	22,707	6,940	15,709	8,315
1977/78	6,998	10,422	18,423	17,420	25,421	7,356	16,902	10,064
1978/79	8,520	9,424	18,346	17,944	26,866	7,744	17,902	10,199
1979/80[4]	12,553	23,680		36,233		22,021		14,212
	1,000 equivalent cases, 24 No. 2's							
Single strength pineapple juice:								
1974/75	3,848	6,127	8,448	9,975	12,296	4,457	9,569	5,518
1975/76[2]	[3] 2,116	N.A.	8,713	N.A.	10,829	N.A.	8,594	N.A.
1976/77	2,235	6,021	10,205	8,256	12,440	4,247	9,614	4,009
1977/78	2,826	7,929	11,977	10,775	14,803	4,663	11,356	6,092
1978/79	3,447	6,861	11,336	10,308	14,783	5,078	11,659	5,230
1979/80	4,280	10,886		15,166		10,207		4,960
	1,000 equivalent cases, 6 No. 10's							
Concentrated pineapple juice:								
1974/75	802	907	1,126	1,709	1,928	432	1,209	1,277
1975/76[2]	[3] 389	N.A.	911	N.A.	1,300	N.A.	1,043	N.A.
1976/77	257	774	1,157	1,031	1,414	442	980	589
1977/78	437	611	1,319	1,045	1,756	509	1,268	536
1978/79	488	614	1,353	1,102	1,841	555	1,273	547
1979/80	500	1,310		1,810		1,074		736

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[1] Season beginning June 1. [2] Revisions in beginning inventory, season pack and season shipments, however, monthly breakdown on pack and shipments will not be available. [3] Carryin does not equal total supply minus total shipments from the 1974/75 season. [4] Beginning 1979/80 can size change from No. 2 1/2's to No. 2 size can. Note: Beginning 1979/80 reporting of these data was change to a calendar year basis beginning five month ending May 1979.

Prepared from reports of Pineapple Growers Association of Hawaii.

Table 31—Fresh fruit: Retail price, marketing margin, and grower and packer return per pound, sold in New York City, indicated months, 1978 and 1977

Commodity and season	Retail price (cents)[1]	Marketing margin		Grower and packer return[1] (f.o.b. shipping point price)[2]	
		Cents	Percentage of retail price	Cents	Percentage of retail price
Apples, Eastern Delicious:					
December 1979	34.7	13.1	38	21.6	62
November 1979	33.0	11.9	36	21.1	64
December 1978	33.0	12.2	37	21.1	63
Apples, Eastern McIntosh:					
December 1979	34.7	17.7	51	17.0	49
November 1979	31.3	15.4	49	15.9	51
December 1978	28.0	14.3	51	13.7	49
Grapefruit:					
December 1979	37.2	28.1	76	9.1	24
November 1979	38.5	29.5	77	9.0	23
December 1978	32.0	25.3	80	6.7	20
Grapes, Emperor:					
December 1979	89.0	55.6	62	33.4	38
November 1979	94.0	60.6	64	33.4	36
December 1978	74.0	40.6	55	33.4	45
Lemons, Western:					
December 1979	82.2	56.9	69	25.3	31
November 1979	80.2	50.3	63	29.9	37
December 1978	74.2	56.0	75	18.2	25
Oranges, Florida:					
December 1979	36.3	26.5	73	9.8	27
November 1979	31.6	21.2	67	10.4	33
December 1978	28.1	17.2	61	10.9	39
Oranges, California Valencia:					
November 1979	52.7	35.6	67	17.4	33
October 1979	52.7	34.6	66	18.1	34
November 1978	62.1	43.7	70	18.4	30

[1] Retail price New York State Dept. of Agriculture. [2] For quantity of product equivalent to retail unit sold to consumers: Because of waste and spoilage during marketing, equivalent quantity exceeds retail unit. [3] Production areas: Apples, Eastern Delicious-*New York State;* Apples, Eastern McIntosh-*New York State; Grapefruit*-Florida; *Grapes*-California; *Lemons*-California.

Table 32—Fresh fruits: 1979 representative truck rates for selected fruits[1]

Commodity, area, and city	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dollars per package											
Apples (Tray packed carton)												
Yakima, Washington area to:												
Atlanta	2.00	2.05	2.05	2.05	2.08	2.18	2.63	---	---	2.43	2.40	2.46
Chicago	1.68	1.68	1.68	1.70	1.72	1.72	2.15	---	---	1.95	1.98	1.98
Dallas	1.72	1.72	1.72	1.72	1.72	1.78	2.15	---	---	2.00	2.11	2.22
Los Angeles	1.04	1.04	1.04	1.05	.90	1.00	.67	---	---	1.26	1.30	1.39
Minneapolis	1.32	1.32	1.35	1.43	1.50	1.42	1.68	---	---	1.63	n.a.	n.a.
New York City	2.60	2.60	2.60	2.60	2.65	2.72	3.12	---	---	3.00	3.14	3.04
Seattle	.69	.69	.69	.69	.72	.75	.78	---	---	n.a.	n.a.	n.a.
Hudson Valley, New York area to:												
Atlanta	.87	.87	.87	.87	.87	---	---	---	---	.84	.84	.84
Boston	.50	.50	.50	.50	.50	---	---	---	---	n.a.	n.a.	n.a.
New York City	.40	.40	.40	.40	.40	---	---	---	---	.44	.42	.42
Pittsburgh	.65	.67	.70	.70	.70	---	---	---	---	n.a.	n.a.	n.a.
Martinsburg, W. Va. area to:												
Atlanta	.73	.73	.75	.75	---	---	---	---	---	.90	.90	.88
New York City	.60	.60	.60	.60	---	---	---	---	---	.75	.75	.75
Pittsburgh	.50	.50	.50	.50	---	---	---	---	---	.63	.63	.63
Grapefruit (4/5 bu. ctn.)												
Lakeland, Florida area to:												
Atlanta	.35	.35	.40	.40	.40	.45	---	---	---	---	.50	.50
Boston	1.23	1.17	1.18	1.22	1.40	1.50	---	---	---	---	n.a.	n.a.
Chicago	1.10	1.07	1.08	1.12	1.27	1.32	---	---	---	---	1.26	1.26
New York City	1.12	1.07	1.08	1.12	1.27	1.32	---	---	---	---	1.26	1.26
Pittsburgh	1.12	1.02	1.08	1.12	1.27	1.35	---	---	---	---	n.a.	n.a.
Grapes (23 lb. lug)												
Fresno area to:												
Atlanta	1.13	1.10	n.a.	n.a.	---	---	---	1.67	1.43	1.50	1.53	n.a.
Chicago	.90	1.07	n.a.	n.a.	---	---	---	1.35	1.18	1.25	1.22	1.18
Dallas	.80	.83	n.a.	n.a.	---	---	---	.98	.98	.98	n.a.	n.a.
Los Angeles	.29	.29	n.a.	n.a.	---	---	---	.32	.32	.34	.34	.34
New York City	1.37	1.40	n.a.	n.a.				1.84	1.81	1.84	1.78	1.78
Lemons (7/10 bu. ctn.)												
Southern California area to:												
Atlanta	1.55	1.60	1.60	1.80	1.90	2.30	2.30	2.35	2.00	1.95	1.90	1.70
Chicago	1.70	1.65	1.60	1.80	2.40	2.40	2.50	2.25	1.90	1.90	1.80	1.60
Los Angeles	.35	.35	.35	.35	.40	.40	.45	.45	.47	.48	.48	.48
New York City	2.20	2.15	2.00	2.60	3.00	3.10	3.25	3.05	2.55	2.70	2.50	2.30
Oranges (7/10 bu. ctn.)												
Southern California area to:												
Chicago	1.70	1.65	1.60	1.80	2.40	2.40	2.50	2.25	1.90	1.90	1.80	1.60
Dallas	.95	.95	.95	1.20	1.65	1.70	1.80	1.80	1.55	1.55	1.30	1.15
Los Angeles	.35	.35	.35	.35	.40	.40	.45	.45	.47	.48	.48	.48
New York City	2.20	2.15	2.20	2.60	3.00	3.10	3.25	3.05	2.55	2.70	2.50	2.30
Seattle	.95	1.00	.95	1.05	1.40	1.40	1.85	n.a.	n.a.	n.a.	n.a.	n.a.
Oranges (4/5 bu. ctn.)												
Lakeland, Florida area to:												
Atlanta	.35	.35	.40	.40	.40	.45	---	---	---	---	.52	.52
Chicago	1.05	1.15	1.15	1.15	1.35	1.32	---	---	---	---	1.32	1.25
New York City	1.12	1.15	1.15	1.15	1.32	1.45	---	---	---	---	1.32	1.25
Pittsburgh	1.10	1.15	1.15	1.15	1.35	1.45	---	---	---	---	n.a.	n.a.

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[1] Reported from a sample of shippers and/or truck brokers in specified areas for shipments during first week of the month.

N.A. = Not available.

Table 33—U.S. monthly average price indexes for fruits

Item	1979													1980
	Annual	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
	(1967=100)													
Wholesale price index:														
Fresh fruit	230.4	201.0	219.9	226.4	238.0	234.1	232.9	238.6	262.6	237.7	236.4	207.7	230.2	221.8
Citrus fruit	238.7	182.0	172.3	190.0	208.7	212.1	216.3	291.5	341.2	336.3	302.2	184.6	227.7	156.6
Other fruit	224.9	208.3	240.2	241.4	249.7	242.4	238.9	212.4	224.3	189.9	204.3	216.8	229.6	250.3
Dried fruit	530.7	579.3	579.7	578.6	578.6	584.0	578.6	578.6	572.5	557.9	412.0	386.9	381.4	377.0
Canned fruit and juice ...	240.2	231.7	233.1	234.3	236.3	237.0	238.3	239.3	240.5	245.7	248.1	249.2	248.8	252.4
Canned fruit	216.6	209.3	210.9	212.1	213.8	213.6	215.8	217.0	218.0	220.6	222.4	222.7	223.1	226.8
Canned fruit juice ...	278.1	267.7	268.9	270.1	272.4	274.5	274.5	275.3	276.9	286.0	289.2	291.4	290.0	293.3
Frozen fruit and juice ..	248.5	246.2	246.4	246.4	246.5	246.5	246.5	249.1	249.8	251.1	251.1	251.2	251.3	251.3
Consumer price index:														
Fresh fruit	248.4	209.1	217.5	226.2	237.1	249.6	266.0	278.2	286.9	271.6	260.4	242.7	234.9	233.6
Index of fruit prices received by growers[1] ..	236	215	231	230	227	245	266	271	280	220	228	225	197	192

[1] Index for fresh and processed.

Table 34—U.S. monthly average fruit prices received by growers

Commodity and unit	1979												1980	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Apples for fresh use (cents/lb.)	13.5	13.9	14.1	14.0	13.9	13.9	14.9	15.6	15.8	13.4	14.0	14.8	14.3	14.7
Pears for fresh use ($/ton)	206.0	222.0	290.0	363.0	501.0	505.0	---	258.0	241.0	251.0	252.0	273.0	274.0	326.0
Peaches for fresh use (cents/lb.)	—	—	—	—	13.4	16.2	13.3	15.8	16.0	—	—	—	—	—
Strawberries for fresh use (cts./lb.) .	61.8	79.0	55.6	39.8	33.4	38.4	48.3	46.3	47.0	48.1	—	—	56.4	[2]67.8
Oranges for: ($/box)[1]														
fresh use	6.92	7.16	7.09	6.81	6.93	8.02	6.99	7.00	5.90	6.30	6.49	6.36	3.31	3.45
Processing	4.42	4.83	4.54	4.46	5.07	5.28	1.06	1.06	1.06	1.06	2.23	2.58	3.07	3.38
All	4.66	5.10	5.17	4.86	5.34	5.64	4.64	4.96	3.52	4.20	4.76	3.18	3.09	3.38
Grapefruit for: ($/box)[1]														
fresh use	2.42	2.63	3.14	4.01	5.14	8.13	10.76	10.16	6.81	5.39	4.11	4.05	3.44	3.40
Processing	1.05	1.28	1.62	1.71	.99	-.69	-.80	-.80	-.80	1.21	2.30	2.59	2.57	2.46
All	1.55	1.73	2.07	2.73	3.52	5.18	6.06	5.42	3.49	4.36	3.02	3.16	2.89	2.80
Lemons for: ($/box)[1]														
Fresh use	4.68	4.66	5.16	6.07	8.63	10.72	20.52	27.42	16.38	14.02	9.20	7.04	3.23	3.95
Processing	-98	-.98	-.99	-.99	-.87	-.99	-1.00	-.70	-.70	.70	.05	.05	.14	.20
All	2.01	1.84	2.41	3.19	5.45	8.35	17.62	23.63	11.74	9.62	5.23	3.89	1.86	1.71
Tangerines for: ($/box)[1]														
Fresh use	8.97	12.61	13.08	10.72	9.40	.00	.00	—	—	9.95	5.95	6.76	5.11	2.97
Processing	2.06	1.36	-.41	-.41	-.42	-.40	-.40	—	—	-.45	.05	.30	.68	-.85
All	4.89	6.48	7.16	5.12	2.55	.40	.40	—	--	8.14	4.29	4.22	2.53	.42

[1] Equivalent on-tree returns. [2] 15 of the month price.

Source: Agricultural Prices, ESCS-SRS.

STATUS OF HARVEST MECHANIZATION OF THE FRUIT AND NUT CROPS IN THE UNITED STATES

Stanley S. Johnson and Mike Zahara*

ABSTRACT: The study examines the status of harvest mechanization of the major fruit and tree nut crops in the United States. Mechanization has progressed further with fruit crops for processing (38 percent machine harvested) than with fruits for the fresh market (less than 1 percent machine harvested). More than 90 percent of the tree nut crops are machine harvested. The effect of machine introduction on labor use is indicated by labor-displacement ratios: these range from 3:1 to 33:1 for fruit, and from 5:1 to 12:1 for nuts. A set of predictions of mechanization made in 1968 was generally over-optimistic, which indicates the difficulty of predicting technological change. The rates of inventive activity and diffusion are responsive to many factors, a large proportion of which eventually are economic. However, inventive success ratios may decrease, since research has already developed technology for the crops that are most easily mechanized and which have the highest per acre values, slighting the more difficult problems and the lower-valued crops.

KEYWORDS: Fruits, nuts, harvest mechanization, labor displacement, adoption rate.

Harvest mechanization, now largely complete for large acreage crops, is turning to crops with smaller acreages, primarily fruits and vegetables. Nationally fruit and vegetable crops range in size from about 800,000 acres for oranges to about 5,500 acres for brussels sprouts. Fruit and nut crops are highly significant, however, for they involve 8 percent of the total crop value although they occupy only 1 percent of the crop acreage (*13*).

The fruit and nut harvest mechanization status and outlook were summarized in 1968 in a landmark symposium of leading horticulturists, engineers, and others (*2*). That meeting produced information on most of the major crops. Since then little comprehensive information has been published on progress in the adoption of new machines. This article provides an estimate of mechanical harvest of the major U.S. fruit and nut crops, describes harvest mechanization changes in the last 10 years, and examines the accuracy of predictions made in 1968 about likely levels of mechanization in 1975. This article also assesses problems in the development and adoption of new technology, and illustrates the patterns of diffusion of mechanical innovations for several crops.

Materials and Methods

The extent of harvest mechanization of each crop was estimated from data obtained in a search of secondary sources, discussions with knowledgeable horticulturists, and research by the authors. These same sources were used to obtain man-machine substitution rates.

A relationship exists between how a crop is used and the extent of mechanization (tables 1 and 2). Fruits and nuts are classified according to use into processed and fresh categories. All of the fresh fruits listed are harvested by hand. Sixteen of the fruit crops are used in processing, with the processing use ranging from 100 percent to less than 1 percent of the total crop. Ten of the fruit crops for processing are all or partially machine harvested. Of these 10, however, only 3 have a majority of the processing crop harvested by mechanical means, while the date crop, listed at 100 percent mechanized, actually utilizes machine aids to assist hand harvesters.

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Results and Discussion

With crops for processing, harvest techniques that slightly damage the surface or even bruise the product are acceptable without significant penalty in the marketplace since the blemish or bruise can be cut out. In contrast, products that are marketed fresh must maintain surface appearance and be free of bruises, especially since the time between picking and utilization may be relatively long. Relatively few fresh-market crops are machine harvested because it is difficult to develop machinery that does not injure the product.

Total value, and acreage, provide a perspective on the importance of the crops listed in Table 1. The relationship between crop value and innovative activity (as evidenced by the degree of mechanization) can be seen using the data in Tables 1 and 2. Schmookler hypothesized that the higher value crops will have more inventive activity, since the profit potential is greater (*12*).

Since no crops for the fresh market are machine harvested, any positive correlation between crop value and mechanization must be determined among the crops for processing. This is not indicative of a lack of inventive activity on machine harvesting for fresh market fruit, only that such activity was not successful. Success in machine harvest technology has been less common for fruit than for fresh vegetables possibly because fruits have more tender skins, grow on trees and are difficult to separate from tree and vine.

The top four high-value crops are oranges, grapes, apples, and peaches. All of these crops have significant proportions of the harvest going to processing uses. Yet, in spite of considerable inventive effort, harvest machines are being used on only a small percentage of the processing crop. For oranges, the proportion is less than one percent, for wine grapes, 20 percent, for apples, 6 percent, and for clingstone peaches, 15 percent. Among the medium-value crops are strawberries, grapefruit and lemons, plums (prunes), pears, and sweet and tart cherries. Of these crops going for processing, the harvests of prunes and tart cherries

Table 1—Fruit and Nuts Crops: Use, Value and Acreage, Extent of Mechanical Harvest, and Man-Machine Ratios for the U.S., 1975

Crop	Use of Crop[1]		Total Value[1] $1,000,000 and (Rank)	Acreage[1] 1,000 Acres	Crop Mechanicaly Harvested[9]		Man-Machine Ratio
	Processed %	Fresh %			Processed %	Fresh %	
Apples	39	61	457 (3)	[4]504	6	0	[10]3.8:1
Apricots	94	6	37 (12)	30	10	0	[11]3:1
Avocados	0	100	72 (11)	25	0	0	[12]0
Cherries (sweet)	49	51	70 (10)	[5]---	25	0	[13]30:1
Cherries (tart)	97	3	23 [5]---	[5]---	75	0	[13]33:1
Dates	100	0	7 (16)	5	100	0	[5]---
Oranges	77	22	654 (1)	[6]862	<1	0	[5]---
Grapefruit	54	46	155 (6)	[6]173	0	0	[12]0
Lemons	61	39	113 (7)	[6]67	0	0	[12]0
Figs	97	3	8 (15)	15	65	0	[14]6:1
Grapes:			618 (2)	[5]---			
Fresh	0	100	[2]159 [5]---	[7]64	0	0	[12]0
Wine Processed	100	0	[2]186 [5]---	321	20	[5]---	[15]5:1
Raisin	100	0	[2]188 [5]---	146	0	[5]---	[12]0
Nectarines	1	99	31 (13)	[5]---	0	0	[12]0
Peaches:	60	40	277 (4)	[7]242			
Cling					15	0	[16]6:1
Freestone					<1	0	[16]6:1
Olives	100	0	23 (14)	30	10	0	[5]---
Pears	56	44	106 (8)	[7]171	0	0	[12]0
Plums (Prunes, dried)	73	27	102 (9)	[7]121	100	0	[11]6:1
Strawberries	32	68	165 (5)	40	0	0	[12]0
Almonds	0	100	128 (1)	247	0	100	[17]5:1
Filberts	0	100	7 (4)	[8]22	0	100	[17]6:1
Pecans	0	100	98 (2)	[7]121	0	85	[13]7:1
Walnuts	0	100	94 (3)	166	0	100	[17]12:1

[1] Source: (13). [2] California only. [3] 1974-75 Crop Year. [4] Data on value, hectarage, and tonnage for 1975 unless otherwise noted. [5] No Information. [6] 1972 Bearing Acreage. [7] 1974 Acreage. [8] 1969 Acreage. [9] Data derived from secondary sources and discussions with knowledgeable horticulturists and engineers. [10] Source: (7, 9). [11] Source: (4). [12] No mechanization. [13] Source: (3). [14] Private communication with R. Klamm, Calif. Fig. Institute, Fresno, Calif., 6/5/79. [15] Source: (8). [16] Source: (6). [17] Source: (1).

Table 2—The percentage of fruits machine harvested: Actual 1968, prediction 1968 for 1975, and actual 1978[z]

	Percentage machine harvested				Percentage machine harvested		
	Actual 1968	Predicted 1975	Actual 1978		Actual 1968	Predicted 1975	Actual 1978
		%				%	
Fruit:							
Processing				Fresh			
Apples	1	10	6	Apples	0	0	0
Apricots	1	40	10	Cherries (sweet). .	0	0	0
Cherries (sweet).	4	50	25	Grapefruit	0	0	0
Cherries (tart)	70	95	75	Grapes	0	0	0
Grapefruit	0	10	0	Lemons	0	0	0
Grapes: raisins	0	0	0	Oranges	0	0	0
Grapes: wine	5	50	20	Peaches.	0	2	0
Lemons	0	0	0	Pears	0	0	0
Oranges	0	10	<1	Plums.	0	3	0
Peaches.	3	60	15	Strawberries	0	0	0
Pears	0	10	0				
Prunes	70	90	100				
Strawberries	0	10	0				

[z]Source: (2) and Table 1. [y]No information.

are largely mechanized, while there is no mechanized harvesting of the remaining crops. Of the low-value crops for processing, figs are largely machine harvested, and mechanization has begun for apricots; the remaining crops are not mechanized. In summary, it is difficult to perceive any direct correlation between crop value and extent of inventive activity on fruit harvest mechanization due to the difficulties encountered in tree and vine mechanization.

Man-machine ratios, (last column, Table 1) indicate the labor savings through machine adoption. The ratios represent the following: Number of hours of labor required in previous technology (whether it involved hand or machine-aided harvest) to number of hours required in new technology.

The man-machine ratios range from 3:1 to 33:1 for mechanically harvested fruit crops and from 5:1 to 12:1 for nuts. Most fruit crops are more difficult to mechanize than vegetable crops and the average rate of labor displacement has been lower for fruits than for vegetables which have man-machine ratios from 5:1 to 100:1. For instance, much of the tree fruit is machine harvested by a shake-and-catch frame. While fewer workers are needed than for hand picking, the speed of the machine is slow relative to some vegetable harvesters.

Since the 1968 summary of harvest mechanization for fruits and vegetables (*2*), changes have been significant although relatively few (Table 1). The major changes have involved a continuing diffusion of machine-harvest technology among crops for processing. That diffusion, however, has been less swift and apparently less pervasive than many had anticipated in 1968. At that time there was great optimism that the rapid development and adoption of machines would continue much as it had for potatoes and, especially, for processing tomatoes (Fig: 1). In fact, the predictions were roughly correct for processed vegetables. It was in the fruit for processing and all fresh categories where the expectations were not borne out.

Predicting technological change involves an assessment of an extremely complicated social process. The process must be assessed in 2 stages: the inventive (product development) and the diffusion (adoption) stages. Success in invention and development of new technology for one crop, followed by rapid diffusion of the innovation for that crop, may have little correlation with the development or spread of technology in another similar crop. To compound the problem, almost every fruit crop is unique. Inventive and developmental activity is argued to be responsive to economic incentives (*10*). However, in the future inventive success for fruit crop mechanization may be lower than in the past, because the crops that are still harvested by hand pose more difficult engineering and horticultural problems. With crops for fresh market, the difficult problem is to design a machine that can match hand-harvest in minimal physical damage to the product. Many machines invented to harvest crops for the fresh market have not been commercially developed or adopted because of faults in design, inefficient performance, poor man-machine ratios, inability to perform in wet conditions, and other shortcomings. Modification of horticultural techniques can facilitate mechanization; examples are the development of adequate abscission chemicals to permit easy removal of fruit from trees or vines and cultivars amenable to machine harvest, i.e., resistant to rough treatment. Meanwhile, economic, societal, and political changes have affected the availability, control and wages of farm workers—factors which greatly affect the growers' assessment of their need for machines.

The diffusion (adoption) process is responsive also to profit expectations (*5*). The speed of the process is affected by other factors as well, such as the dissemination of information about the innovation, the growers' familiarity with the technique or product, and the education and skill levels of the potential adopters. Thus, there is little incentive to adopt a harvest machine if the cost of hand and machine harvest are fairly close, if the supply of labor is adequate, or if the management of labor is not too difficult.

Figure 1 contrasts the pattern of diffusion of mechanical harvesting of cotton, a major U.S. field crop, with that of some fruit and vegetable crops. The cumulative diffusion portrayed shows that the complete cycle of adoption for this large crop from 0 to 100 percent adoption was S-shaped (sigmoid). Early adoption was slow followed by rapid adoption by the majority of growers which tapered off as diffusion neared completion. This S-shaped diffusion pattern has been noted by others for large crops, especially Grilche's study of the adoption of hybrid corn (*5*). For small-acreage crops, however, the pattern is not as obvious from observation of the data. The diffusion cycle for potatoes resemble an S-shape. However, the processed tomato and tart cherry cycles indicate such a rapid adoption as to be almost straight lines, although they do taper off as the cycle nears completion. The remaining crops, peaches and wine grapes, exhibit what might be the start of a sigmoid curve; however, it is too early yet to tell. Although large-acreage field crops have followed an S-shaped diffusion cycle, the small acreage and small number of growers may preclude any typical shape of the adoption curve for many fruits and vegetables. Also, developments such as dwarf trees that ease hand harvest tasks will influence adoption rates of harvest mechanization. If cultural practice can be utilized to reduce labor requirement, then the incentive to mechanize is reduced.

The pace of the future technological change for fruit harvesting will depend on a number of factors, especially on the direction of research. The change in scope of mechanization from large to small-acreage crops can focus more research attention on fruit and vegetable crops. One implication of this change in focus is that it may not be economically feasible for large manufacturers to undertake the development of this technology—or even to fabricate machines from existing designs—if the market is small. Future development of mechanical harvesters for small acreage crops likely will have to rely largely on the research of public institutions, small machinery companies, individual growers and machine shops.

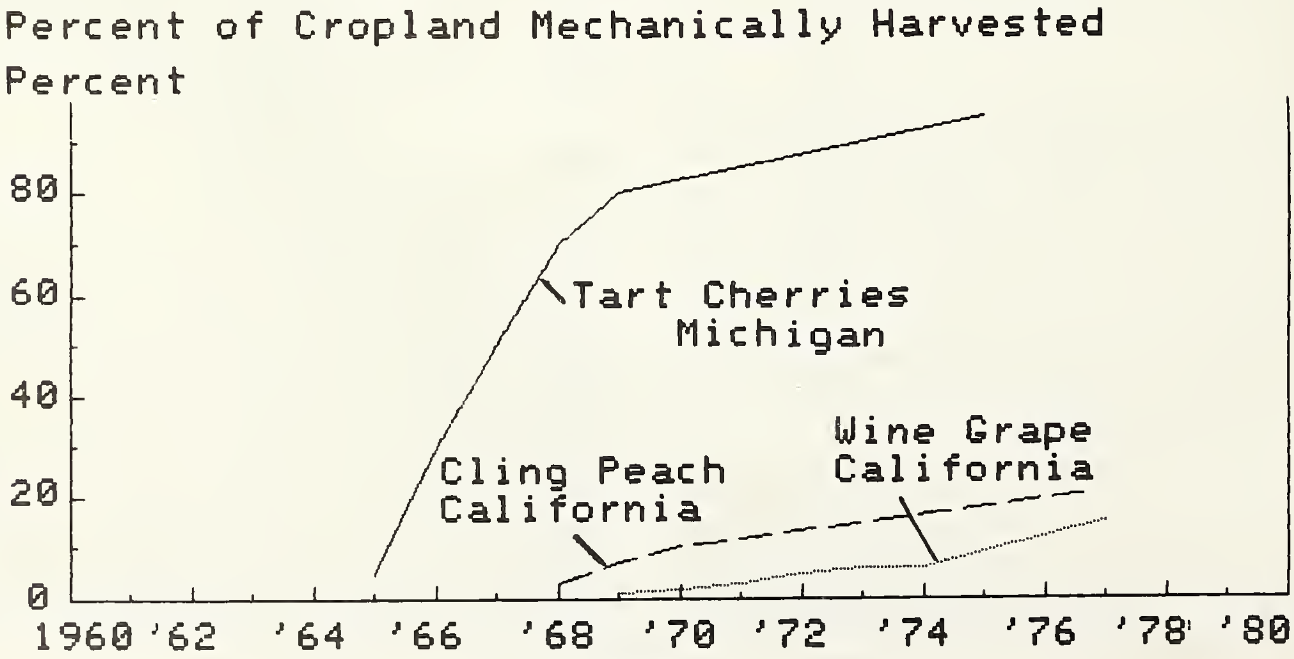

Figure 1

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